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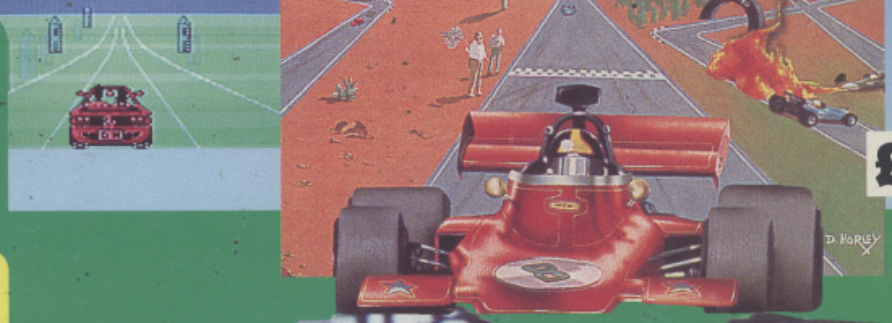

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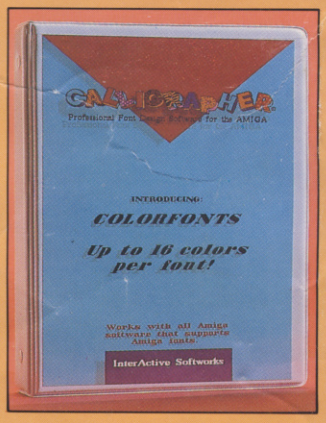

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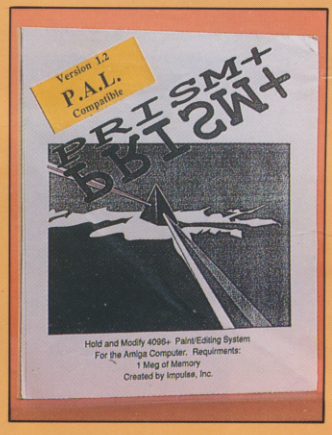

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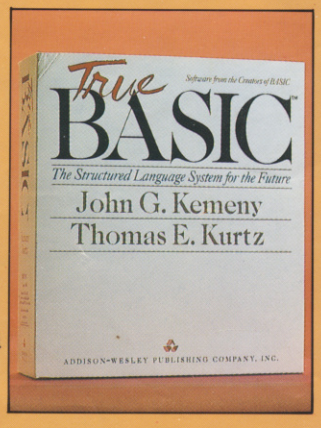

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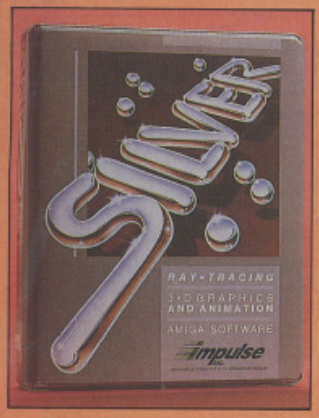

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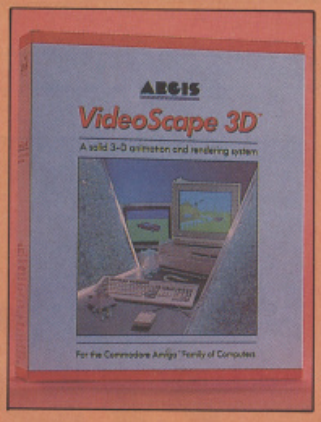

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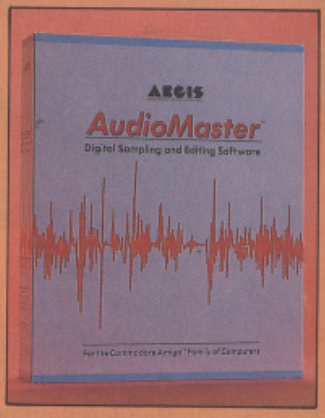

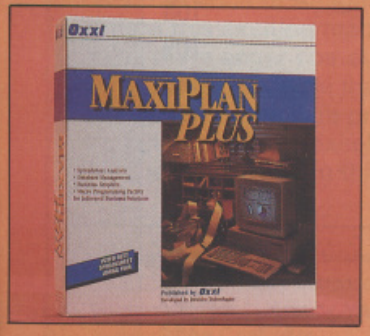

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FEBRUARY 1988

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CCI View

Dear Reader

Dear Reader,
Some eighteen months ago we published for the first time a full Amiga magazine: Commodore Business and Amiga User. It was the first outside the U.S.A. and was bound into CCI. The Amiga material was exclusively concerned with the Amiga 1000. Since then two other Amigas, the 500 and the 2000, were launched and our Amiga magazine grew to a bi-monthly, separate and more extensive publication than CCI's Amiga section, available mainly on subscription. Now the publication is changing its title to Amiga User International and also goes on sale monthly on the world's newstands. The change of title and enlarged distribution are well timed. For, as we shall report in the next Amiga User, we have received information as we go to press with CCI, that Commodore is preparing to bring out a new range of even more powerful Amigas. At the same time, as is clear from the advertisements that appear in CCI and Amiga User, the price of Amigas is falling substantially, putting this exciting machine within the reach of many more eager computer users. It is not only the price of the hardware that is coming down. Good quality 16 bit software prices, especially of games, are falling too. The excellent Amiga 'Hunt for Red October' (reviewed in this CCI) costs little more than the full price 8 bit software.

That is all very encouraging for the Amiga user, present and future. But many CCI readers will — may have to — remain content for a long time to come with the other CBM machines. In this issue of CCI there are many articles that will specially interest them. Even the PET and the Vic 20 get a mention!

We have also included reviews of a new mouse, a new Final Cartridge (the final final cartridge?), a Yamaha Midi Synthesiser, expert advice on how to program your own adventure and also on how to build an interface plus controversial opinions from Jeff Minter and Graeme Kidd. CCI's extensive coverage includes a quartet of new car games and two "awesome" rated 64 packages that would be outstanding on any machine. With arcade conversions continuing to gain significance, we report on a major link-up between two important U.K. and Japanese entertainment companies. And there is the Amiga Section, which will continue in future issues, for we know many non-Amiga owners want to be kept up-to-date on the machine. We also know that many Amiga owners continue to buy CCI because they have kept their 64's and 128's and are still interested in what is happening to those computers.

With this wide range of material it is not really surprising that recently a reader called CCI "The Thinking Man's Commodore Magazine". We try to provide a magazine that is varied enough to keep you fully informed and entertained. But another of our aims is also to help CCI readers think for themselves across the whole computing field. So CCI being called "The Thinking Man's Commodore Magazine" is for us a very pleasant compliment. Of course,that qualifies you as "The Thinking Man" or, if it applies, "The Thinking Woman". We trust you will take that as a compliment, too.
Yours Sincerely,

Antony H. Jacobson
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New Star Plant

Star Micronics Co Ltd of Shizuoka, Japan, is to establish a major printer manufacturing plant near Tredegar in South Wales.

Star Micronics Co Ltd of Japan is forming a new subsidiary, Star Micronics Manufacturing U.K. Ltd., to manufacture computer printers for the European marketplace at a 5,000 sq m facility in South Wales. The factory, is located near Tredegar (30km north of Cardiff).

One of the market leaders in Europe in dot-matrix printer technology, Star is already a significant importer of computer printers, and has recently launched its first laser printer.

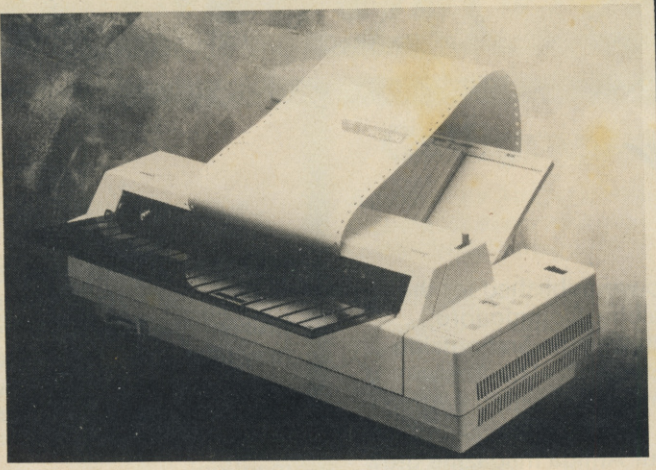
Production at the Welsh plant is expected to start in March 1988 with initial volumes of around 10,000 printers per month, building up to around 30,000 units per month by 1990. Within six to twelve months of the start of operations, the company aims to be sourcing over 40 per cent of components localy. The new factory will create more than 180 new jobs.

Each and every machine will undergo an intensive, automatic inspection routine in which all features and functions of the printers will be fully tested prior to final visual checking.

For further information please contract: Mr T. Takahashi, Star Micronics U.K. Limited Tel: 01-840 1800 or Chris Wilson, Harvard Marketing Services, Tel: 01-759 0005.

Blitzkreig — Machine C64

Hewson are also releasing Blitzkreig in which using your tank and helicopter you must capture six enemy bases and destroy two missile silos avoiding gun emplacements, rockets, enemy aircraft and missiles. If you fail to destroy the silos, the missiles will be launched and your destruction will be inevitable. £2.99 for the 64.



Micro Control Systems' new 8K Comprint interface allows Epson and Canon printers to be used with Commodore 64, SX64 and 128.

New Comprint Expands 64/128 Printer Options

Micro Control Systems (MCS) has announced an 8K version of its Comprint buffered interface. The unit allows Epson and Canon printers to be attached to Commodore 64, SX64 and 128.

A drawback of Commodore's 64 and 128 computers is that they feature a unique bus system and non-standard character set. The result is that they are incompatible with many popular printers. MCS's Comprint device overcomes this difficulty by being designed around a code translator which, essentially, makes an Epson or Canon printer behave exactly like a Commodore device.

The device is easy to install. Simply plug the Comprint circuit board inside the printer, connect the cable supplied to the serial port on the Commodore computer, and the Epson or Canon machine is ready to run.

Once installed, the Comprint unit is claimed to provide total emulation as well as allowing access to all the other features found on these two printers such as condensed print and other typestyles. For the business user, there is the advantage of being able to use 15 inch paper.

Costing £34.99 for the 8K Epson version and £44.99 for the Canon equivalent, the Comprint is an interestingly economic answer for anyone wanting to get more out of their Commodore. Simultaneous to the launch of these 8K models, Micro Control Systems has reduced the retail price (incl. VAT) of its 2K versions to £29.99 and £39.99 respectively, while the stand alone device has been reduced to £79.99.

Contact: Micro Control Systems Tel: 0602 391204.

Digital I's TT

Fans old and new of the exciting TT Racer simulation will be pleased to hear of a new and even better version. There are several refinements to the game itself and further improvements to the graphics. These include: ● All the latest Grand Prix tracks to choose from. ● Improved graphic presentation. ● Better instrumentation. ● Easier handling of the bike. ● Strategic depth and improved game play.

If you like TT Racer lookout for TT Racer II. It's more gripping, more demanding than the original. It will be available on IBM P.C. and C64.

Password '15 Years'

The former chief financial officer of an insurance company has been sentenced to prison because he created a secret computer password that 'locked' the company's computer when he resigned.

George Coker, who worked for the Golden Eagle Group in Florida, admitted in court that he created a password that stopped the company from making $400,000 in monthly billings. Coker installed ths password in the billing system that he helped to develop.

Coker had asked for a $5,000 a year rise and then threatened not to release the password until this and other demands were met.

It took Golden Eagle six days to crack the password, which was 'Wgaca'. This stood for 'what goes around comes around'.

Coker was found guilty of extortion and denying computer access with intent to defraud. He now faces up to 15 years in prison.

Micronet Enhances Shades

Shades, the UK's most successful multi-user adventure game, will be available to Micronet subscribers in an 80 column scrolling text format by early October. Previously only accessible in a customised 40 column viewdata mode, the enhancement means players will benefit from faster game-play and more on-screen information.

Since its launch a year ago Shades has become one of Micronet's most popular services, and currently clocks up between 3000 and 3500 hours of playing time a week. "Multi-user games are the logical progression for serious games players to make," says Micronet's Technical Director Mike Brown.

The new scrolling version of Shades will cost 2p a minute to play. The price of viewdata Shades remains unchanged 1.62p a minute.

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Four Smash Hits from Hewson

"Four Smash Hits" is the aptly named top line compilation from Hewson due for release early in 1988. Featuring Exolon, Zynaps, Rana Rama and the all-time chart-topper Uridium Plus this classic collection could turn out to be a must for all game players.

Blasting birth-pods, rampaging rockets and shattering grenades put Exolon at the top of the charts during the autumn of 1987. Awesome asteriod storms and murderous alien minions made the 450 scrolling screen Zynaps a chart topper for a few weeks earlier. Mervyn the Sorcerer's Apprentice locked in an evil labyrinth, sent Ranarama bounding up the charts in early 1987. And Uridium Plu, the horizontally scrolling shoot-em-up is rated by some the greatest home computer arcade style game of all time.

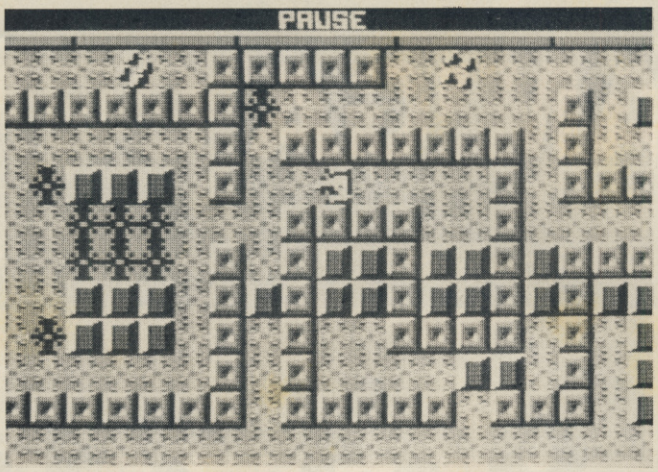
Four Smash Hits on Commodore 64 cassette and disk from Hewson out in early 1988 price £9.95 £14.95.

New PC to Fax board

Gulfstream Micro Systems (GMS) have launched a new fax-to-PC product, EZ-FAX. EZ-FAX (pronounced easy-fax) UK. It is a facsimile board that allows users to access and send faxes direct from a PC.

EZ-FAX, a desktop fax, is claimed to be currently the only facsimile board which allows the user to send a fax from a PC. In addition, it allows simultaneous processing of other functions, such as: the scanning of documents with EZ-SCAN; the printing of documents; simulatneous applications on a PC such as word processing etc. Additional features include an installation program, the logging of existing files, a file manager, on-line help and on-line telephone directory with an EZ-DIAL facility. Price: £2,040.00.

Contact: Allison Clout, 76 Cambridge Gardens, London W10 6HS. Tel: 01-968 9385/-01-969 0621. Fax: 01-969 0869.



Hewson Racks up Success

It's a couple of months now since the Rack-It Label was launched by top software house Hewson, so we went along to have a word with Software boss — Andrew Hewson — for his views on the reception of the range. ANARCHY the scrolling strategy shoot-em-up is apparently a big success. "Written by the mad Australian Mike 'Crocodile' Seitinella" was Andrew's comment. Apparently this globe trotting programmer from the Antipodes stepped straight off his plane from Sydney into the Rack-It offices mumbling darkly about producing his own homage to Boulderdash. After months of secret work, Anarchy was the result.

Sunburst from Nebulus author John Phillips and Tunnel Vision are doing quite nicely thank you, but the big news believe it or not, is the success of Draughts Genius! This little offering was released on the Spectrum and is a draughts program. Who would have thought that anyone would be interested in it? But sales figures show that it has its attraction, perhaps because it features Albert Einstein as the genius of the title and the graphics are said to be outstanding. This too will be appearing on the C64 shortly.

To complete the international flavour of the Rack-It range of submarine simulation Ocean Conqueror which is due out on the C64 in the early spring was written and produced in Hungary. The main Hewson label is full of simulations such as Southern Belle and Heathrow Air Traffic Control so our reporter wondered whether Ocean Conqueror was an indication that Rack-It might go the same way. "I want to try a selection of different products first of all to see which ones will work", replied Andrew Hewson. "The sell through figure for Ocean Conqueror on the Spectrum certainly imply that it was worthwhile so maybe more simulations will follow".

From the Mirror to Mirrorsoft

It's Friday night and your dole cheque's missing — if you're as big a skiver as Andy, you've got a real problem on your hands! Yes, it's that horrible strip cartoon character for the Daily Mirror — Andy Capp. Mirrorsoft (who else?) are bringing to the world of computer games.

You or Andy (Yak!) You'll need every ounce of your Northern charm to find out who the *!?. made off with your cheque — especially as you've only got a week. To extract helpful information from your friends and acquaintances, you'll have to blow kisses at them — but that'll take a drop of Dutch courage (and neither of the two pubs in town will give you credit). So you've no choice but to use whatever's left over from the last dole cheque to buy a paper, check the racing page, and slide off to the bookies, hoping for a winner. Watch out you don't get into a fight — or you could find your wallet flying out of your pocket, never to be seen again!

Yes, now, in the comfort of your own armchair, to the soothing strains of the Hovis telly ad, you can punch the rentman, scrounge from the barman, blow kisses to your girlfriend, try to sneak off with Flo's handbag — with no danger to your lazy self whatsoever!

Reg Smythe, the creator of Andy Capp, is drawing a special cartoon for the game packaging — C64 £9.95 (c) £14.95 (d).

Supercomputer for museum

The first supercomputer ever installed in Europe has been retired to London's Science Museum's computer collection.

London-based computer services company Service in Informatics and Analysis (SIA) has donated the computer a Control Data CDC 6600, which was decommissioned last year.

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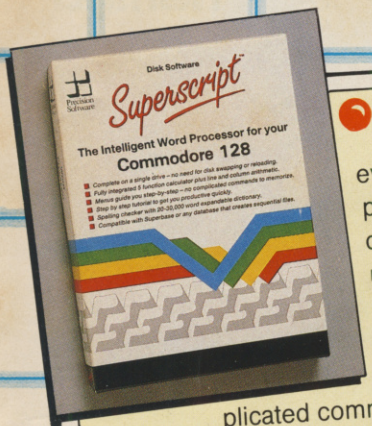

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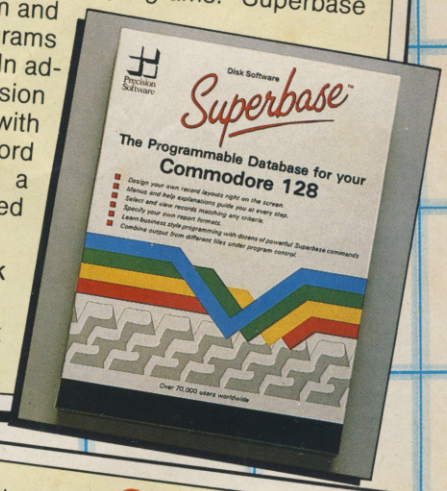

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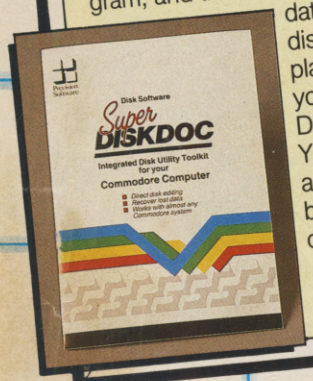

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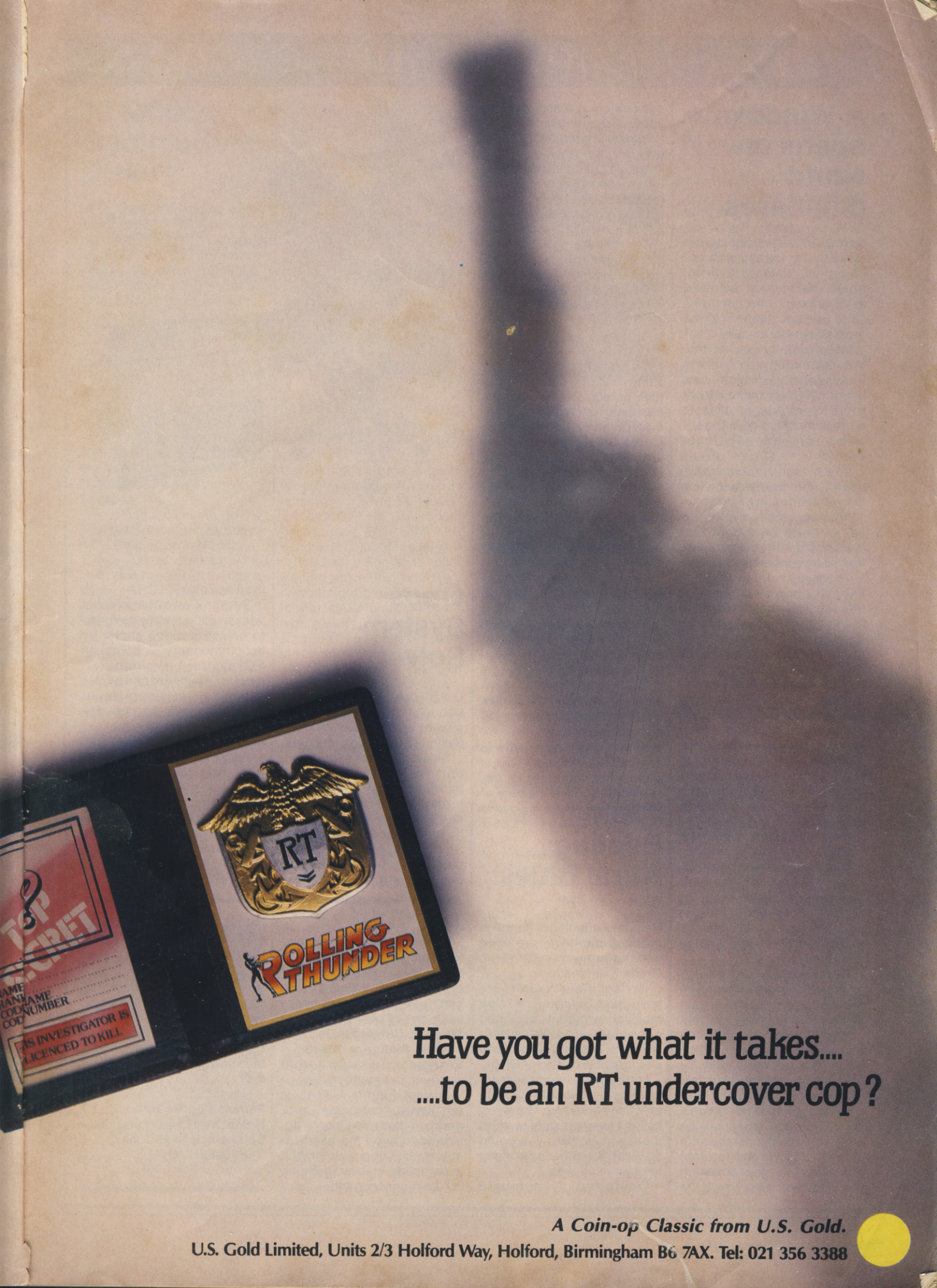

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A Window opens on world databases

North American companies make five times as much use of on-line databases (electronic information sources) as European ones and the chief reason seems to be greater ease of access.

Istel, formerly the information technology arm of the Rover Group which was bought out by its management some months ago, aims to redress the balance in the UK with a service it calls "Infosearch".

It is a simple, moderately-priced common window on the world's major electronic databases which allows information to be sought and identified without complex operating procedures.

There are some 2,000 on-line databases companies offering information for sale in the US and some 1,000 in Europe.

Customers have a number of objections to making greater use of these high-speed information sources. They claim that access is too difficult, especially for the untrained and that they have to learn a different set of commands for each database. They also object to a multiplicity of charges and billings, one for each service.

Istel is attempting to make matters easier by linking together two facilities: its own data network, Infotrac, with some 68 access points in locations throughout the UK, and Telebase, a US service based on artificial intelligence methods.

At its simplest, Infosearch offers a single telephone number a user can call to gain access to databases resident on the Infotrac network. When the service is launched on December 1, there will be four-Profile, Infocheck, a fast growing credit checking company, Dialog and Jordans.

Experienced users will be connected to the database of their choice via the Infotrac network where they can search the electronic files using the conventional procedures they know and understand.

Inexperienced users, however, or those who do not know on which database the information they are seeking resides, can ask the system to make the choice for them.

In this case, the customer is switched through to the Telebase computers in Philadelphia. Here an expert system sets up a series of questions designed to elucidate what kind of information the customer wants and where it is likely to be found.

Customers can, of course, simply ask for a database of their choice. But whether the customer chooses the database or the system makes the choice, the search procedures are common for all databases, eliminating the need to learn separate query languages for each.

Istel sent a test mailing to some 700 UK companies of which 70 signed up in the first week.

Costs for the service are similar to those charged by individual on-line database companies. A credit search through Infocheck costs £10 per report. Searching through the Profile database costs £1.33 per minute of connection. There is a onetime charge of £100 for each user password issued.

All the customer needs to gain access to the network is a personal computer or terminal fitted with a modem.

Opus System-Solver

Opus Technology has scored success in the European market with the launch of its System-Solver computer desk.

Since the desk's launch in Summer 1987, the Surrey-based company has received orders from France, Holland and Germany. Total sales at home and aboard are currently running at around 1,000 a month and the desk has also begun to attract interest from the Far East.

System-Solver is a compact workstation specially designed to banish desktop clutter by accommodating a complete PC system — computer, monitor, keyboard and printer — while still leaving plenty of desktop space for the operator.

Priced at £149.95 + VAT (retail) the desk comes with a free matching swivel chair and inclusive delivery anywhere in mainland Britain.

Contact: Opus Technology Limited, 53 Ormside Way, Holmethorpe Industrial Estate, Redhill, Surrey.
Tel: (0737) 765080.

Beating Aural Blues

Help is available for all those music students who are faced with the termly round of Music Grade Examinations.

Perfect Fourth Software have just released a new musical program designed especially for all music students, budding singers and instrumentalists alike: AURAL.

Until now, it was necessary to have a pianist, to help practise aural tests. But if you haven't even got a piano, then there was nothing you could do. AURAL has been designed to change all that.

Designed by a music teacher, AURAL faithfully follows the syllabus of a Associated Board of the Royal Schools of Music. As the program is "intelligent", you can't outguess it. It chooses each one of over 250 tests at random. But AURAL's most original feature, however, is to show you exactly how to conduct, in time to music.

Perfect Fourth AURAL is not just a "composer" program, it has also been designed to avod the need for any special computer skill. It is complete in itself, needing no keyboard or other add-ons.

Both disk and tape versions are now available, covering grades 1 to 5 ranging in price from £14.85 to £18.45. A special Turbo loader has been designed for AURAL by TRILOGIC. A full memory load can take just over a minute on tape and about 17 seconds on disk.

Contact:
Perfect Fourth Software, 11 Hempstead Lane, Potten End, Berkhamstead HP4 2QJ.
Tel: (04427) 6311.

12 Million Commodore Disks

RPS, Europe's leading computer media manufacturer has announced one of the largest single orders ever for floppy disks — 12 million 5¼" floppy disks, which will be sold as 'Commodore' branded disks.

The deal, signed between BATAVIA and RPS — which has the marketing rights for the Commodore label in West Germany — involves the supply of Commodore branded 5¼" diskettes from RPS' factory in ALBI in France.

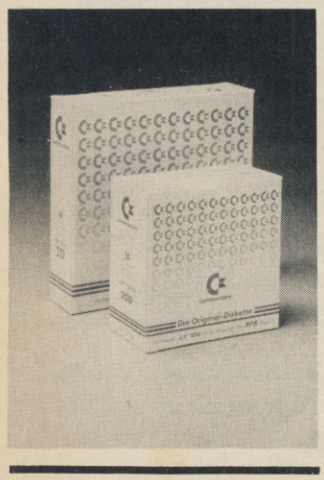
The contract means that RPS now has nearly 20% of the German market — the largest floppy disk market in Europe.

It is also claiming to be market leader in France, Spain, Italy, Belgium and Norway.

In a bid to dominate the microdisk market for the latest PC's, RPS has recently launched a unique 2MB 3.5 inch microdisk, on display for the first time at the Which Computer? Show.

The 3.5 inch format is fast becoming the new industry standard because of its superior performance for very high density recording, and RPS has successfully developed innovative technology to create the new disk.

For further information please contact: Ivor Norkett, Business Manager, RPS, High Street, Houghton Regis, Beds. LU5 5QL Tel: 0582 867222.



Lineker Scores 3000!

Gary Linerker gave a quick moving star performance launching Gremlins FOOTBALLER OF THE YEAR board game and SUPERSTAR SOCCER computer game.

Following England's convincing win in Belgrade, Gary flew straight back to London to start the promotion of his two newest products. This started at the House of Fraser in London's Oxford Street on Thursday morning followed by Selfridges. After a very quick lunch and radio interview, it was then on to Hamleys in Regent Street, the largest toyshop in the world. At all these venues, the crowds made the Kop look like a tea party.

Friday was just as hectic for Gary. So much so in fact that Gremlin Board Games and Gremlin Graphics decided to fly him from London to Leicester in a helicopter. Having landed at Leicester's Filbert Street football ground, Central Indepedent Television were anxiously waiting to interview him. This completed, two more personal appearances at both W.H. Smiths and Zodiac toys in the city were made that day. In all, it is estimated that over the three day period, Gary signed over 3000 autographs.

Citizen Europe is 2nd Year

In just two years Citizen Europe claims it has succeeded in becoming as the fourth largest printer manufacturer in Europe with a market share of 8%. Printer sales for the forthcoming year are expected to rise from 150,000 ('86/'87) to 230,000 units with a forecast turnover of £40 million for 1987/88.

Citizen Europe recently staged the first UK demonstrations of two new models in its computer printer range — the LSP100 together with the new MSP40 and MSP45 nine pin dot matrix printers —as well as showing its new range of floopy disc drives and liquid crystal displays.

Ocean Conqueror

An interesting departure for top shoot 'em up gamehouse Hewson is Ocean Conqueror, a fully detailed submarine battle simulation. Ocean Conqueror will be on the C64 and adds weight to Hewson's growing Rack-It budget label line up.

In Ocean Conqueror, you take charge of your submarine and eliminate four convoys supplying the islands in your area. You have 18 hours in which to complete the task.

It features torpedoes, guided missiles, a combined radar and sonar plus a host of other systems and controls. Ocean Conqueror, Hewson claims, is the best submarine simulation to date and at only 2.99 looks value for money.

Arresting News

Invent a supercomputer that runs at speeds that dazzle the mind and all it gets is a big yawn. Get arrested by the FBI — now that's news! Saxby Inc make a supercomputer Matrix 1, that is claimed to run at between 250 million to 1 billion FPS — floating point operations per second and that's pretty fast. However, not too many people took much notice until one of Saxby's ex-employees was grabbed by the FBI and accused of selling information about Saxby's Matrix 1 to the Soviet Union. The FBI say that Russia wants the Matrix secrets to help them with Star Wars-style technology. Saxby may be sorry for their former employee but they are not too sorry for themselves. Their Vice President for Marketing, Anthony Yates was more than pleased with the resulting publicity. "We've gone from being almost unknown to getting nationwide attention." He chortled. The ex-employee may not be quite so happy. He faces 15 years in jail.

New from EA

Electronic Arts have some new products planned for early 1988. Instant Pages is a DTP package for the PC which EA thinks will attract a lot of attention. For the Amiga, they have high hopes for Ferrari Formula One which the famed Ferrari car manufacturer has authorised. They are also bringing out Bard's Tale II and World Tour Golf, the first Amig golf game/-simulation to arrive for some time. EA are launching Intellitype, a typing tutor that claims to have sophisticated artificial intelligence that designs drills for your own favourite typing errors. There are also whispers of a game that combines Gauntlet with Archon and Temple of Apshai, created for EA by Free Fall Associates who wrote the latter two games. Incidentially EA gave their own Product of the Year Award to programmers Mike Posehn and Tom Casey for Deluxe Video.

INTERFACING THE USER PORT OF C128, C64 AND VIC 20

by John Iovine

It is not easy to find a project that will prove interesting to beginners but also challenging to experienced users of Commodore computers. If it is to offer something for different machines too, that makes it even rarer. So we are very pleased to be able to include this interface project from John Iovine which certainly provides an area of interest for the C128, C64 and Vic 20 that is within the reach of anyone who can use a soldering iron. Of course, you should be careful to follow the instructions exactly and not to take any chances with short cuts. It works well and is very useful but obviously you should only attempt it in a way that does not damage your computer. Perhaps it should carry a 'computer health warning'! Nevertheless the effort will prove well worthwhile.

The process of connecting a computer to an external device or circuit is known as interfacing. Interfacing can involve controlling, reading or exchanging data from your computer to an external device, circuit or another computer.

The applications range from electronic control of appliances and electroic device, security systems, robotics and bio-feedback devices. By interfacing various transducers one can have the computer monitor and react to light, sound, temperature, pressure, vibrations, and more. It's easy to see the applications are only limited by your imagination.

Commodore engineers have been very generous in their design of computers, allowing users access to various I/O (input/output) ports. This I'm sure is one reason for Commodore's immense popularity and profusion of hardware and software.

Our concentration will focus on the user port located at the back of the following computers; the Vic-20, C64 and C128. These computers all have similar user ports (see dia A). that function basically the same way.

We will be accessing Port B of the user port (see dia A) labeled PBØ thr PB7. This is an 8 bit parallel port. Each bit on the port is bidirectional, programable as either a input or output bit. Each bit on the port can be programmed independantly from all the other bits.

6526 CHIP

Commodore computers use an integrated circuit chip between the central processing unit (microprocessor) and the I/O ports. The C-64 and C-128 use a 6526 CIA (complex interface adaptor) chip. The Vic-20 uses a 6522 VIA (versatile interface adapter) chip.

(In order to avoid confusion, further descriptions of the 6526 CIA chip will be the only one given, and should be assumed to be the same for the 6522 chip unless otherwise noted.)

All input and output functions are transmitted by the CIA chip to the micro-processor CPU. Each 6526 CIA chip contains 2 parallel, 8 bit input/output ports, two 16 bit counter/timers, clock and a serial shift register. The chip is responsible for the 60 HZ interupt routine, keyboard scanning, game port reading and serialized data input.

We will learn to use the timers, interupt routines serialized data input later on in the series. For now we will concentrate on basic functions.

All accessing of our user port is through the 6526 chip. To access this chip we must be able to set and read various bits on the chip registers. The registers are like a byte in memory, we can peek or poke to this memory location to set up the register. This isn't as difficult as it may sound but it does require a basic understanding of the binary number system.

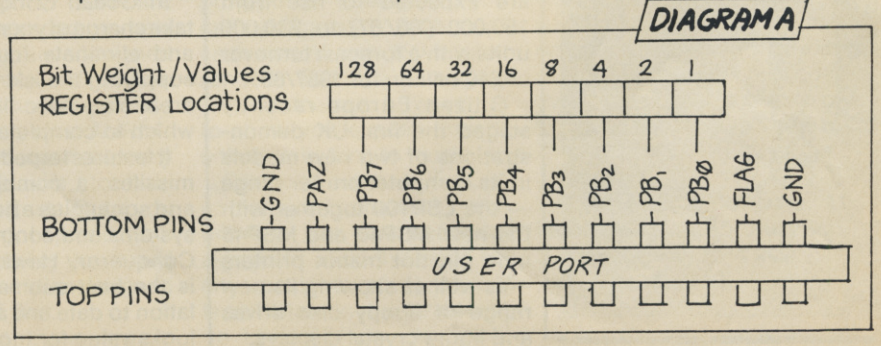
BINARY

Binary means "based on two" as in two numbers, 0 and 1. Or like an electrical switch that has two values off (0) and on (1). In binary a digit is called a bit, which stands for "binary digit". A byte is a digital expression containing 8 bits. The micro-processor used in the computers we're working with are 8 bit micro-processors.

TABLE 1

Binary	Powers of two		
00000001	2^{0}	=	1
00000010	2^{1}	=	2
00000100	2^{2}	=	4
00001000	2^{3}	=	8
00010000	2^{4}	=	16
00100000	2^{5}	=	32
01000000	2^{6}	=	64
10000000	2^{7}	=	128

DIAGRAM A



Since this article is on interfacing the user-port, we will investigate the binary relationship to controlling various I/O functions. All the information however is applicable to controlling other chips in commodore computers. A fuller understanding of binary number system can be acquired by reading some of the many fine books available on ML language.

Examine Table 1: For each progression of the binary "1" to the left the power of 2 is increased by 1. These are relevant numbers, because each progression identifies a bit location and weight. Notice the correalation between the User Port and bit weight table, we will be using this often.

Examine Table 2: This table demonstrates binary counting 0 thru 20. This chart will come in handy later on. When a bit in the port is configure for input, the computer uses electrical voltages present at the pin/bit to determine whether that bit is set (on) 1 or clear (off) 0.

A binary "1", is equal to a voltage level between two and five volts. A binary "0", is equal to a voltage level between zero and 0.8 volts. Voltages between 0.8 and two volts are undefined.

It follows, when a bit in the port is configured as an output, the computer will output 5 volts when a binary "1" is placed at the pin/bit location or 0 volts when a binary "0" is placed at the pin/bit location.

DDR

The DDR (data direction register) is a programmable register on the 6526 chip that controls the direction of the bits in the port (input or output). A binary 1 placed at a bit location will turn that bit into an output bit. Conversely a binary 0 will make that bit an input bit.

The DDR occupies one byte in memory. The location of the DDR for Port B on the User port is 56579 for the C-64 and C-128- For the Vic-20 the DDR location is 37138.

We use our bit weights (table 1) to output binary 1 s at the corresponding pins to create output pins. Any pins that aren't programmed as outputs automatically have 0's placed at their bit location and are therefore configured as input pins (see table 2). POKE 56579,20 would turn PB2 and PB4 into output bits, as PB0, PB1, PB3 PB5, PB6 and PB7 automatically became input bits. To see this more clearly, transfer the binary equivalent of 20 (table 2) into the empty register location spaces on table 1. The binary "1"'s are in B2 and PB4 bit locations.

POKE 56579,3 makes PB0 and PB1 output bits. Transfer the binary equivalent of 3 into the location spaces. Doesn't the number 3 in binary place binary 1's at the location of PB0 and PB1. As you can see by pokeing this location with various bit weights we can configure any pin in the port to be an input or output bit in any combination we might require. Any unused bits can be ignored.

To summarize let's state by pokeing a binary 1 in the DDR corresponding to a bit turns that bit into an putput bit. Conversely by pokeing a binary 0 will turn the bit into an input.

PARTS LIST

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1	Breadboard	Radio-Shack	276-175 or 276-174
1	12 x 2 Card Connector (User Port)		

Radio-Shack = Tandy Corp.

PERPHERIAL DATA REGISTER

After we have configured out port with the DDR. we can start using it. The peripheral data register memory location is 56577 (see table). This is where we poke and peek to input or pull data off the pins.

The procedure is similar to the one described for the DDR, we'll go into greater detail after we build our demonstration circuit.

INPUT

Examine the diagram of the user port again. Beneath the user port are labels PB0, PB1, PB2,... PB7 corresponding to the pins on the user port. Under that the corresponding bit weight for each pin.

Now let's configure all the bits on the port as inputs:

Poke 56579,00 Data Direction Register (DDR)

Places binary "0"s at all bit locations.

Now we apply +5 volts to pins PB2 and PB4. By applying the 5 volts to these pins we are inputting a binary 1 at each pin, if we then peek the port:

Print Peek (56577) Peripheral Data Register

the number 20 would be returned. This is the added bit weights (4 + 16= 20) of pins PB2 + PB4. Look at table 2, transfer the binary equivalent of the number 20 into the bit locations on table 1 it is the same. The binary "1"s are in the same bit positions we inputted. If we applied +5 volts to just PB5 then peeked the port the number 32 would be returned.

This is true for all pin/bit combinations.

OUTPUT

Let's reconfigure our user port so that all the bits are now outputs:

Poke 56579,255 Data Direction Register (DDR)

Place binary "1"s at all bit locations

Now poke the number 20 into the port.

Poke 56577,20 Peripheral Data Register

What do you think will happen? If you reasoned that +5 volts would appear on PB2 and PB4 you are right! By pokeing the number 20 into the port we are essentially outputting a binary 1 at those two pins.

It is important to understand that the voltage outputted is a signal voltage that has very little power, therefore it cannot be used to run a device on its own. But by adding a simple circuit described later in our series you can use that signal to control most any electrical appliance you'd like.

If you feel a little confused at this point don't worry it will all come together very quickly once you gain some practical experience by utilizing and experimenting with the port. In order to do this you will need to build the demonstration circuit.

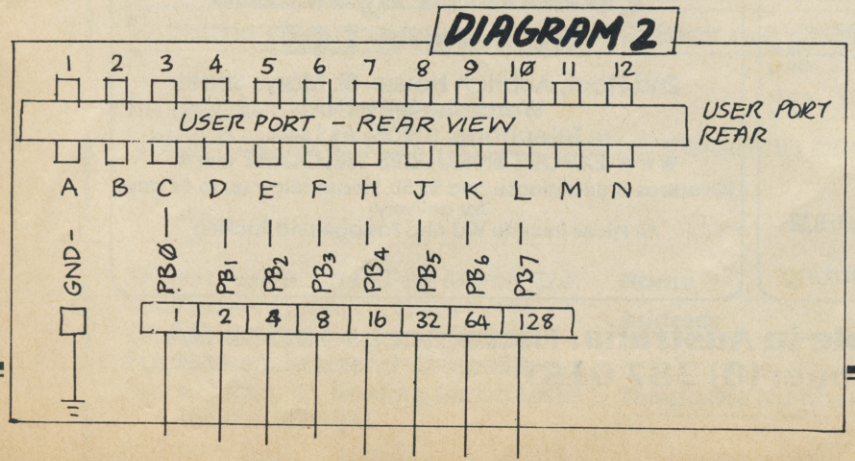
Circuit Construction

Look at figure 2. This is a simple circuit

TABLE 2

DECIMAL		BINARY	DECIMAL		BINARY
0	=	00000000	11	=	00001011
1	=	00000001	12	=	00001100
2	=	00000010	13	=	00001101
3	=	00000011	14	=	00001110
4	=	00000100	15	=	00001111
5	=	00000101	16	=	00010000
6	=	00000110	17	=	00010001
7	=	00000111	18	=	00010010
8	=	00001000	19	=	00010011
9	=	00001001	20	=	00010100
10	=	00001010	and so on		
			255	=	11111111

DIAGRAM 2



CONTINUED ON PAGE 52

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Robtek's

Brilliant Diamond Competition

Well, don't say you don't get prizes that are amazing in CCI! Robtek's classy new Diamond label is starting on a new high profile campaign. They want you to remember the name. So how better, CCI suggested, than to give away real diamonds! 'Brilliant,' said Robtek, 'We'll give CCI Readers the chance to win £5,000 worth!' So five lucky, lucky, winners are going to have something to flash around worth £1,000 each. (Flash around! I beg your pardon!) So that everyone gets an equal chance, no more than *one* entry per CCI is allowed. We will include this competition in the February AMIGA USER which will be in the shops in January, so that if you want to have a second go you can find another coupon there.

All the answers can be found in this issue of CCI.

1. Name two Robtek labels

2. Name the Robtek boss, and where he presently lives

3. Name three Robtek games

4. In which area of computing are Robtek concentrating?

5. Name one non-game product Robtek are distributing

Tie Breaker sentence
I think Robtek's products are worth considering because (not more than 12 words)

.....

Entries must reach CCI by March 31st, 1988 on the coupon on this page (photostats will not be accepted)
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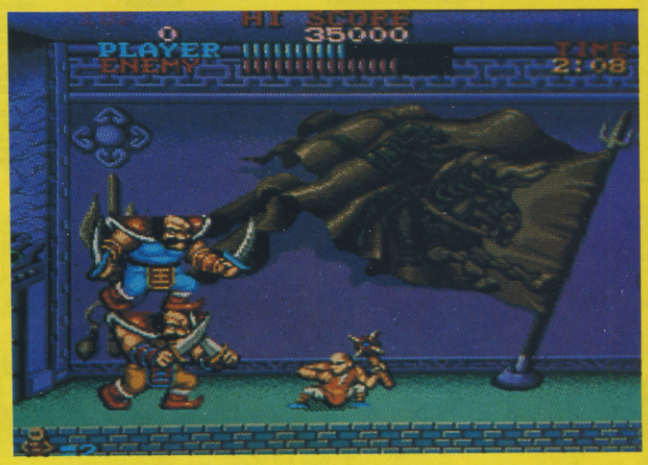
Why does anybody buy a computer game? No, not a '£1.99 please, Mummy can I have this' from a Tesco Supermarket. A real nearly £10-just-out-on-the-market 'Have you played this one yet' chart topping game. Well, the really big players in the games market — no not fat 15-year-olds — the companies that produce the games that cross the world and batter their way into your sitting room have to believe that they 'know' why you will take your hard earned cash and blow it on their products rather than somene else's. Sometimes you and we, wonder — as U.S. Gold Boss Geoff Brown would say — why some of them bother. For no one can deny that although plenty of good games hit the charts, loads of pure rubbish clog up the counters of computer shops and software departments of the chain stores. Supposedly their bosses think they 'know' too what will sell, too.

However just as there are some real stumers that should have been strangled at birth before even being coded, there are some games that have smash hit written all over them — words that successful companies' bosses read with little dollar signs flashing up in their eyes like the movie cartoons. How do those magic words "Chart Hit" become to be be stamped on a game? if you 'know' the answer to that, you too can be a Geoff Brown or, in the case of the U.S. Gold sister label GO!, a Tim Chaney.



10...9...8...3...2...1...

Why does the aforementioned GO! boss, Mr Chaney, at present have those dollar signs flashing up in his eyes like a fruit machine that has hit the jackpot? Because he thinks he knows one vital key to open that magic chart door and something that appears in the last two years to have become one of the absoutely necessary conditions for big chart sellers. And he has locked it into at least ten of GO!'s forthcoming releases. The magic words in this case are "Capcom Coin-Op Hit".

As, of course, you are aware, there are about five major companies in the world that produce games for the arcades, Nintendo, Sega, Atari, Namco and Capcom. This last has good claims to being among the top two for the triple element that ensures an avalanche of coins pouring into machines that carry its games around the world — imagination, originality, creativity. You've only got to mention arcade games like Ghosts 'n Goblins, Sidearms, Speed Rumbler and probably the greatest of all, Commando — maybe the most copied game of all time — to realise the strength of Capcom's credentials.

This point did not elude the sharp minds in the Birmingham basedGold software empire who through

But because all great ideas are simple, Tim Chaney probably said to himself "Why mess around with individual licences for each game?"

GO! had already signed up Capcom for three of its hits. But because all great ideas are simple, Tim Chaney probably said to himself "Why mess around with individual licences for each game? We know the quality that Capcom produces. Why not sign them up for *all* their games?"

Of course, with a big Japanese company that kind of deal is never easy to work out. It took nearly half a year, lots of meetings with Yoshihito (George) Nakayama, President of Capcom Inc, the Japanese company's worldwide chief outside Japan, and it involved one other small matter — two million dollars. A cool £1,200,000 — give or take a few thousands that looks like coming out of the deal.

When CCI met the happy pair, Messrs Chaney and Nakayama, they were smiling at each other as if they had both managed to put something hot over the other one. It seemed that they each thought that they had got the winning advantage out of this particular arrangement.

GO'S CHANEY AND CAPCOM'S NAKAYAMA SMILING 'AS IF THEY HAD BOTH MANAGED TO PUT SOMETHING OVER EACH OTHER'

"Why", we asked George Nakayama, "should Capcom sign up with a relatively new U.K. label?"

"Because U.S. Gold has the strength of marketing," he replied still smiling. GO! clearly is for Capcom a recognisable arm of the Gold Empire, even if it is creating its own identity, and that 'gold' relationship gives it tremendous muscle in the business of selling software, which Capcom respects. "And," went on the Capcom Presiden, "It will *only* be taking Capcom."

...7...6...5...4 Capcom says GO!

Tim Chaney confirmed that a part of the deal was that while GO! was getting the exclusive on the next ten Capcom games, GO! was in its turn committing itself not to take on any other coin-op company's products.

This may not be such a hardship for the Gold Empire as it seems. It has other labels — U.S. Gold itself, Ocean or Gremlin which could still bid for the non-Capcom top arcade games. That made it about a score of one each in advantages.

George Nakayama made another interesting point. "It will be easy for us to control."

No, he didn't mean that GO! staff members would in future wear Capcom uniforms or sing the Capcom company song. He meant that by going through just one company instead of communicating with a whole swatch of different organisations, Capcom would not only be dealing with people it understood and trusted but would be more easily able to ensure quality and receive less hassle than having to maintain relationships with multiple licencees.

Chaney came in with the point that the Capcom range gave GO! itself greater market credibility — which means getting lots of games onto lots of shop shelves and then onto lots of home screens. Which made it about two all in the advantage score and more understandable why they were both still smiling with more than merely usual business style politeness.

Why should GO! with a cheque for two million dollars almost visible in the Chaney hand pick Capcom? Would no other arcade company have been as good? Didn't anyone else want to share 2 million plum blossoms? It seems the answer is that Capcom is one of the youngest and brightest companies in the field and their spending on the research and development of its games is at least equal to and possibly greater than any other company's. Capcom's games, says Chaney, unlike some of the other big companies, are consistently good. It is, as he put it, "The young buck . . . the high flyer". And he had his own opinion why Capcom picked GO!. 'They like to go with the winners,' he said modestly.

As in any field of creative work, youth and drive — and the willingness to take a chance and try new ideas — counts for a lot. And Capcom seems to be able to come up with the high flying goods time after time.

To understand why, you have to go back to the beginning of arcade games. Well, back to the beginning of arcade games as we know them. You could say that there are only four original — truly original — coin-op classics: Pole Position, Star Raider, Pacman and Space Invaders. Virtually all other games have taken their inspiration from them.

Those early games needed no more than around 256K and probably took no more than three months to create. Now games like OutRun, Combat School, Streetfighter or Afterburner will require 1Mg or even 2Mg of memory and in cases like OutRun custom chips manufactured for that game alone, a highly expensive process. Not only does this complexity mean substantial cash investment but also demands a structured way of producting ideas — for a game can take nowadays not three months but one or even two years to complete.

One ideas man? "No," smiled Hoshihito Nakayama, "many Ideas Men"

Capcom has a team of over 200 engineers working on games. They also have an Ideas Man. *One* ideas man? "No," smiled Hoshihito Nakayama, "many Ideas Men." Interestingly, in spite of the Japanese dedication to high educational standards, there was no requirement for *any* formal training or qualifications for the Ideas Men. It seems Capcom realises that it has to encourage creativity however it arrives — a far cry from the usual picture of the strictly disciplined workforce, force-fed with education, that westerners believe is all that exists in Japan. They do however emphasise teamwork with the usual graphic artists, scrolling programmers, sound people and so on.

CONTINUED PAGE 21

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3 . . . 2 . . . 1 . . . Capcom says GO!

. . . CONTINUED

Once, of course, the Ideas Man's idea has been approved — by a team that includes a high-powered marketing person too. What happens next, after the game is finished to the satisfaction of all concerned, is perhaps just as vital as the original idea. It is testing. No, not the ordinary testing to see if it works. Of course, it works, it's Japanese! No, this is market testing. They put the finished game out into key arcade sites and see how the public likes it. No, not by nice young market research girls asking questions but by seeing how much the arcade gamesplaying public is prepared to spend on playing the thing. They can tell if the public likes it by the amount of cash that rolls in and is counted every day. $100 more than all the other coin-ops in the same place and Banzai! they know they're onto a winner. $50 less than another and that great new game idea gets the order of the honourable scrapheap.

So Capcom's secret appears to be not very different from the reasons that other Japanese companies have become worldwide success stories. They give time, resources and commitment to their products. They pour in ideas, well-trained people, technical support and test thoroughly before launching their products on a well targetted public.

$2 million dollars for unknown products? Wasn't that a little on the wild side for a shrewd business company like the Gold Empire?

Tim Chaney asserts that the Capcom name will play a prominent role in the marketing strategy of these GO! products, that you,the gamesbuying public,will be able to relate the quality that is Capcom to the ten games it plans to release over the next fifteen months — up to the beginning of 1989. CCI asked just what those products would be — always hopeful of being able to let you into the secrets of the future. For the first time Tim Chaney lost some of his rapturous composure. He shifted a little uncomfortably in the generous armed chair of the luxury hotel. It was clear that he did not know. $2 million dollars for unknown products? Wasn't that a little on the wild side for a shrewd business company like the Gold Empire? Well, he knew the first four. They were standing, arcade machines and all, there in one of the most expensive hotel rooms in Central London. They were Street-fighter, Black Dragon, 1943 and Tiger Road. (What did they do? Bring them in through the window from Hyde Park?) But the other six? He turned to the Capcom President. "I'm sure George knows," he said hopefully.

Yoshihito Nakayama smiled politely but inscrutably. If he did know, he wasn't telling. He merely commented, "The market is very, very competitive. Ideas must be kept secret."

However, GO!'s Chaney did not appear unduly worried. He had already acquired the rights to three Capcom hits, including the about-to-be-released Sidearms. He has seen the latest four Capcom blockbusters. They were there right in the room. In fact not just seen, for he demoed the games to CCI with a skill that only comes from many hours of practice. He has spent a long time negotiating with Capcom and is prepared to take their word for how good their games will turn out to be. But it was an interesting leap of faith for a businessman who intends to make GO! a leader in the home entertainment world, with a strategy of such determination that he says, with a grim arcadely violent humour "We will take no prisoners . . . and we'll tear the wrist watches off the corpses." When such a businesslike company signs such a contract for such a sum of money without even seeing the products, then you can wager a Capcom arcade machine against an empty cassette box that they have cast-iron confidence that the games *they* are going to buy will be games that *you* will want to buy too. Because for both Capcom and GO! there is just too much riding on it for them to allow those ten games to be anything but the very cream of the arcade conversions that you are likely to play this side of spring 1989.

Capcom

"The Quiet Giant of the Video Game Business"

Even in the computer field the astonishing rise and rise of Capcom is regarded with some awe. It was founded just five years ago in Japan's ancient capital of Osaka by Kenzo Tsujimoto and its sales of video games, in different forms, are now moving towards the $100 million a year mark.

Capcom, says Kenzo Tsujimoto, "began by organising individuals into small software development teams". The "small teams" included idea-orientated specialists in planning, character designing, software programming and hardware technicians, interacting with music coordinators and sound programmers, assembled in groups of twenty people." ("Small teams" of 20 people? No wonder Capcom produces outstanding products. In the U.K. a "small team" is half a programmer working at the weekends and a "big team" two and a half programmers five days a week!)

Even through the downturn of 1983/4, Capcom built up a growing business of creating video games which came about because they believed that the games-playing audience wanted more than they could get from the old cartridge-type video games. They believed that there was a "new breed" of game player who demanded high quality graphics and more sophisticated gameplay.

With games such as Ghosts 'n Goblins, 1942, Section Z, Speed Rumblers, Bionic Commandos, Sidearms and possibly the most successful coin-op ever, Commando, Capcom lays claim to the title of "Premier World-Wide Arcade Designer".

Last, but certainly by no means least, was the game that impressed us most — Tiger Road

That is a big claim but the four arcade machine games that were shown to CCI are clearly top samples of their kind. Streetfighter has huge graphics and a speed of action that will make most other beat 'em ups look snail-slow. Black Dragon seemed like a first class Gryzor-style all action shoot anything that moves game with some very com-

CONTINUED P23

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. . . 3 . . . 2 . . . 1 . . . Capcom says GO!

. . . CONTINUED

plex backgrounds. What can you say about 1943? Except that it is like 1942 but better and last, but certainly by no means least, was the game that impressed us most — Tiger Road. Possibly because it is based on a story from Chinese literature that is reputed to be over five hundred years old, Tiger Road has a strength and depth of interest that is rarely seen in computer games. It is a multiple challenge game created beautifully —and we do mean beautifully for the graphics are large, excellently drawn and highly colourful — that takes you through a series of fierce battles against a whole menagerie of enemies from individual soldiers to dragons —crawling *diagonally* across the screen spitting balls of golden fire! — to lethal kites. Yes, large soaring and diving kites — and what could be more original but oriental than fighting kites?

Some of the Commodore GO! conversions for the coin-op games will be carried out, by Capcom, in the U.S. Sidearms' 64 version was produced this way. But GO! is also getting probably the most successful computer game development company in the U.K. — Probe Software — to do some of the conversions.

With Fergus McGovern, Probe's Managing Director, we watched Charles Cecil, U.S. Gold's Software Development Manager, struggle through the many different and highly exotic levels of the stunning Tiger Road. The wary look on McGovern's face prompted us to ask how Probe would make the conversion of this knockout of a game. He frowned, "With difficulty," he said feelingly.

If GO! — and Probe — can get close to the brilliance of Capcom's arcade original then in Tiger Road the new partnership of GO!/Capcom would come up with the best home computer coin-op game you will play in 1988.

We said goodbye to U.S. Gold's Cecil and Probe's McGovern. They were still Tiger Roading away. We looked at the four garish arcade machines standing incongruously in the luxurious hotel room. What about those other six games yet to come. We shook hands with the ebullient Tim Chaney who showed no sign of being worried about them. Yet with development time scales as they are, Capcom's "small teams" must already have them far advanced. Yoshihito Nakayama bowed courteously. Maybe CCI should grab trusty notebooks and trench coats and dash for a plane to Osaka and dig out whether those mystery six really existed. Maybe we could smile politely enough to persuade Capcom's Ideas men to reveal all the secrets of the hotshot games that GO! valued at $200,000 a shot. We bowed back to Yoshihito Nakayama. Maybe . . . It's a long, long flight to Japan and though we like their sushi raw fish, we only know one word in Japanese and that means goodbye . . . Maybe not . . . Better we should stick close to the arcades, watch the name Capcom and start studying Japanese . . . Or maybe just wait for Capcom and GO! to come up with something even more stunning than Tiger Road . . . "Small team" . . . "Tearing the wrist watch off . . ." Smiles of satisfaction . . . Maybe a combination like Capcom and GO! could even put that in all those ten oriental glories on our home screens just like the arcades . . . Maybe . . . As the door closed, we realised that we had forgotten to say our Japanese word. Oh well, see you on the Tiger Road. Sayonara.

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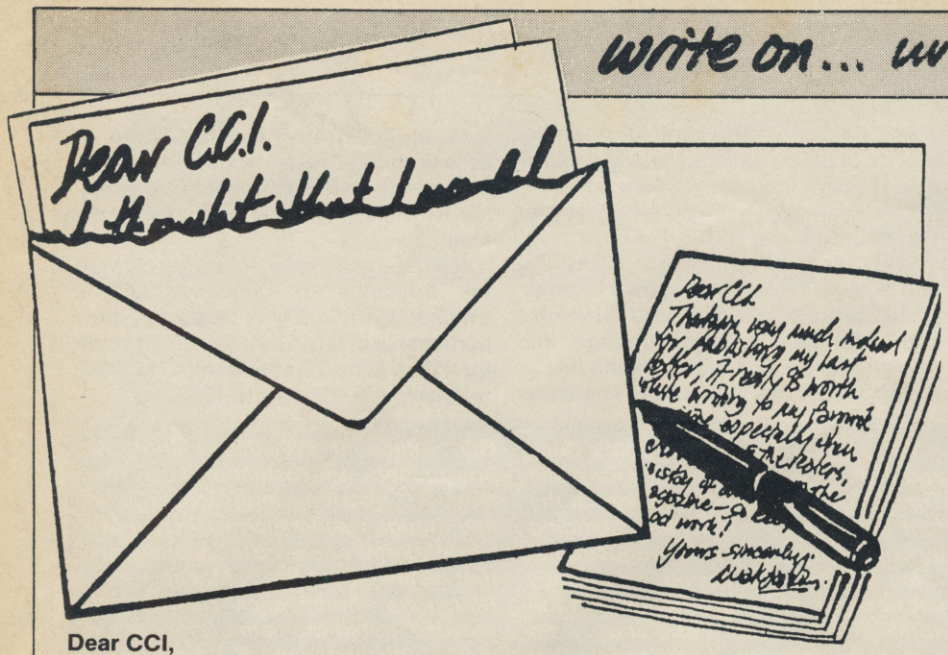

Dear CCI,

First things first. I hereby confess that your mag is the best in the known universe.

Don't know how you keep doin' it ev'ry month! Always looks crisp, smooth and well layed out. It seems together, y'know what I mean? And at the price, it beats the s....eeerr living daylights out of other mags (as well as the dead ones).

Here comes your status report (on a scale of 1 to 10, where 10 is super and 1 is REAL BAD.) =

Layout = 9 News = 9 Readers Letters = 10 (absolutely fab) Features = 8 Reviews of games = 7 (the rating system needs some polishing). Coverage of new systems (Amiga, C128) = 9. Competitions = 8 (when the girl on page 90 of your September issue visits Holland, giver her my address .. then we can see if we are compatible!) Adventure section = I am not gonna talk of things I know nothing about. My opinion on that particular section would be worthless, but I heard from friends who like adventures it's a MEGA section.

So far for the ratings, now let's get seious. Sometimes I read about sexism in computer games and magazines. Why get so nervous about sex after all? If it hadn't existed you hadn't either! By the way, there are magazines that are all about it, and that's were young people really should be protected against.

I am 20 years old, so I known what I am talking about. So much for the sex problems related to mags and chips.

I want to tell you all about it. Makin' you more curious by the minute, huh?

I bought an Amiga 500 computer, and I want ev'ryone to know it is beautiful, mega, astounding, gasp-creating, devastating to the ears and eyes!

Now I see what I've missed all these years in animations, music, speed and user-friendlyness. I can tell you all about it, but seeing and hearing is believing, dear reader!

If you can save money for it, do it, no matter how long it'll take until you can buy it! Everything is crisp on this machine, it is almost impossible to create a stupid program when using this WIMP environment.

It is also VERY memory-gobbling. I've never had memory problems on my C64, and later, 128. So I figured that 512K would be enough ... no way, partner! For example, a HAM-screen sets you back up to 256 K (with window refresh) !

I also found 1 drive VERY limiting, you simply get pain in the hand of swapping disks continuously. So I need a memory upgrade to at least 1Mbyte and 1, but rather 2 external disk drives.

So I ordered a memory upgrade from a company in England which name isn't worth noting, because even after several letters they wouldn't send the thing. It's quite a lot cheaper than in Holland, so I ordered it in England.

What's the matter, don't you trust me or what! I even stated that I was willing to pay in advance with a check from them, but they seemed to have such extreme prejudices that they didn't send it.

Please, somebody of CCI's staff, buy an A501 upgrade for me, I am willing to send you the money now. Just send me a letter with the person I can pay to, so that he can buy the upgrade and send it to me.

If someone out there could do that for me, I would be most grateful. A reward will be given to the person who wants to help me out.

So far for my problems. I read about a reply to a letter from someone who asked for the price of dot-matrix printers, and you stated that there are very few printers in the range of about 100 pounds. However, I have been able to purchase a Brother HR-5 for 179 guilders. In pounds that is 179/4 = approximately 45 pounds! It works in perfect harmony with my Amiga and although it is quite slow (30 cps), it's a bargain. It prints all the fonts from the Notepad (see sample) and works with the entire Deluxe series of programs.

To use it, set your Preferences to: Epson JX-80 Style: Pica or Elite Pitch: own choice Parallel Printer width: Costum Choose Graphics: anything you like (try sideways!) So far for the Amiga (still love it, somehow!).

Let's get a bit more serious now, I am currently looking for members of my own Amigos and Amigas User group (A&AUG), and of course I'd like to invite every Amiga owner anywhere around the world to become member of it. For more information please write to me. I also will start running an Amiga BBS with download software (pictures, freeware, music samples), and lots and lots of information, preferably in English AND Dutch language!

I'll contact U when it's ready, so you're going to be the first member, CCI!

For now, keep up the excellent work you're doin' ev'ry month.

Dave Engbers
Campanulastraat 38
3053 VA Rotterdam Holland

Dear Dave,

We like your status report rating of the CCI contents. You'll notice we have made a change to the games ratings polishing it a little. We'd like to hear what the readers think.

We also think you're right, sex is a part of life and even if you own a computer you don't need 'protection' against it.

We'll do what we can to help you get a memory upgrade for your beautiful, mega, astounding, gasp-creating (great phrase that!) devastating to the ears and eyes Amiga. And you get our 'Letter of the Month' award to go with it!

Dear CCI

From chatting on Compunet's Party Line, it seems that many otherwise dedicated computer users are unaware that the BBC's Ceefax service has a computing news section. Now this seems a shame, especially as I contribute to it!

The computing pages start at 701 (BBC2). My bit is 'Call Compunet', a digest of some of the current activities to be found on Compunet, which include news, views, reviews, special interest groups, advertising, hints, clubs, and software (art, music, games, utilities).

'Call Compunet' can be a little ..er..irregular, but it averages an appearance every four weeks, and stays up for a week at a time.

With the imminent availability of Compunet to Amiga and Atari ST users, there will be a lot more activity to report, including trial access via kermit or x-modem.

I'd recommend Ceefax page 701. Well, I would wouldn't I.

Yours Sincerely,

James Taylor

Thanks for the hint for our CCI compunet readers, James.

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Wow! We don't often get three letters on the same subject! We aked Peter Gerrard to answer them.

Dear CCI,
In the October 1987 issue, there was an article called "Thanks for the Memory". It said that it's impossible to read the colour memory at $D800-$DBE7. As a proof, this line was given:
FOR I=0 TO 39:PRINT PEEK (55296+I);:NEXT
The result seems to be random numbers. The reason this doesn't work as expected, is that the 64 only has 16 colours number 0-15. Because of this, only four bits are needed to tell which colour to show on the screen. The upper four bits in each byte isn't used. To keep the four lowest bits and throw the others away, you just hve to make a bitwise AND with 15. Try this line:
FOR I=0 TO 39: PRINT PEEK (55296+I) AND 15;:NEXT
Hey Presto! The numbers aren't random any more! The program included changes all occurrences of a colour to another. This program is smaller than the one in the article, and since it doesn't need 1000 bytes of RAM to store the colour in, I think it's better! The usage is: SYS 49152,a,b where a is the colour to be replaced and b is the colour to replace it with.
Yours sincerely,
Jolly Cracker of XAKK
Sweden

```
10 FORI=T039:READA:POKE49152+I,A:NEXT
60000 DATA 32,238,183,134,87,32,238,183,160,216
60010 DATA 132,89,160,0,132,88,177,88,69,87
60020 DATA 41,15,208,3,138,145,88,230,88,208
60030 DATA 241,230,89,169,220,197,89,208,238,96
READY.
```

Dear CCI,
I am writing this letter to say that Mr. Peter Gerrard didn't really have to go through the trouble of making a colour Search & Replace program for his "Thanks for the Memory" article in October's issue of CCI. This bit of BASIC or it's M/C equivalent would have done just as well.

```
10 INPUT"SEARCH CODE, REPLKACE CODE";S,R
20 for T=0 TO 999:Z=PEEK(55296+T) AND 15
30 IF Z=S THEN POKE 55296+T,R
40 NEXT T
```

Yes, it's true that when you try and read the colour memory all you get is a load of garbage, but if you were to read the lower four bits of each byte only, you would no doubt get a true colour code. For those familiar with the internal workings of the 64, such as I, should know that the Commodore 64 uses half bytes for its colour coding. It is always wise to only read the lower four its when dealing with colour.
Mr. Gerrard should have known that the colour memory is RAM and now WOM, for it were WOM, who would the 64's built in scrolling routine scroll the colour memory? Anyway, must go now!
Yours sincerely,
Kashif Baig, Edmonton
P.S. Shame on your Peter Gerrard for not realising that in the first place!
P.P.S. I'm only 14.
P.P.P.S. I bet you Pete hasn't been shamed up by a 14 year old before.
P.P.P.P.S. If you're in need of programming assistance, write to me anytime.
P.P.P.P.P.S. I think CCI is brill. No joke!
P.P.P.P.P.P.S Don't you?
P.P.P.P.P.P.P.S. Now then, who's got the most PS's, eh?

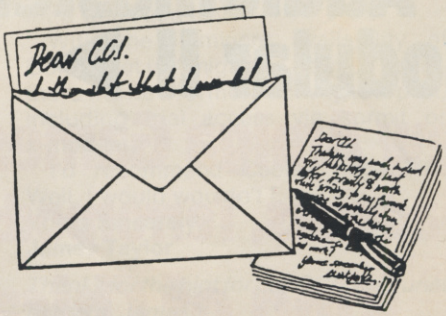
Dear CCI,
With regard to your article in the October issue "Thanks for the Memory". I felt I must write to say that the first of the two routines presented is rather a waste of time.
The author gives a small piece of BASIC code, claims it will not work, and proceeds to produce a machine code substitute. Whilst being a useful article on coding techniques, the premise of the article is that PEEKing (reading) colour memory on the 64 returns a ramdom value. This is not in fact the case.
The colour memory is 1K of nybles (4 bit words), not bytes, so only the least significant four bits of the value returned are valid. The most significant four bits are indeed random. To change the colour memory from BASIC, change the second part of line 10 of the BASIC program given to read.
:IF (PEEK(I) AND 15) = A THEN POKE I,B
The machine code equivalent is to use the AND op-code, AND #$OF.
I hope this clears up any possible confusion for your readers, and saves some one a little memory in their next blockbuster!
Yours faithfully,
Cris Bailiff, Lancs.

"Yes, you're quite right, only the four least significant bits of the colour memory need to be read, the rest being indeed random. Thanks for pointing it out, and shame on me for not remembering. Perhaps England had won a cricket match and I'd been out celebrating! But, at least the machine code routine works and it significantly faster than Basic, which was the main point of that part of the article anyway. Now I'll go and write out a hundred times THINK NIBBLE, NOT BYTE."

Peter Gerrard

Dear CCI
What a superb competition you set last mag, for those of us who want to win an Amiga. I do hope you only get a few entries.
I must admit that I could almost write a list of all adverts/reviews/feature of the top of my head, I think the most difficult question was No 70, as the answer was tucked away in smaller print.
I was wondering, which of these new cartridges "FREEZE FRAME" "EXPERT" etc gives the best value for money, as I just can't decide.
Oh bye the way, I think the existance ofCommodore Computers is being put under threat.
Last week I made a trip into town, and found that no-matter how hard I tried, I couldn't find a C-64 for sale, and whats more the AMIGA was only on sale in one store, BOOTS AND W.H. SMITH were most impolite when I asked why they only stocked Spectrum and Amstrad computers, they said it was something to do with the 64 being unsafe.
Is a certain Mr. CASTER-SUGAR crossing palms with silver in order to sell his machines, well I doubt that, however my younger brother shan't be getting a 64 this xmas.
Finally, keep up the great standards of your magazine, and tell J.MINTER that I envy his house in WALES, he couldn't have picked a better place, It's lovely and we go there every year.
Yours faithfully
Paul Stringer
P.S. CCI reader for yonks.

Dear Paul,
Glad you like the competitions. We wanted to find out if anybody actually read CCI!
It seems that at least you do — and so does the smart guy who sent in 16 entries — all arriving in the same post, in the same handwriting.
As for the new cartridges, we have recieved them all over the past year or so. The latest is Final CartridgeIII, in this issue. They are all highly professionally produced products. Ask the manufactures for full details and decide which suits you best.
As for Boots, W.H. Smith's etc and the lack of 64's, the inefficiency in non-specialist shops is notorious. The other day someone asked in a W.H. Smiths for CCI and was told they don't sell it. When we checked they sold 12 copies and were already sold out. Still we'll pass your complaint on anyway.



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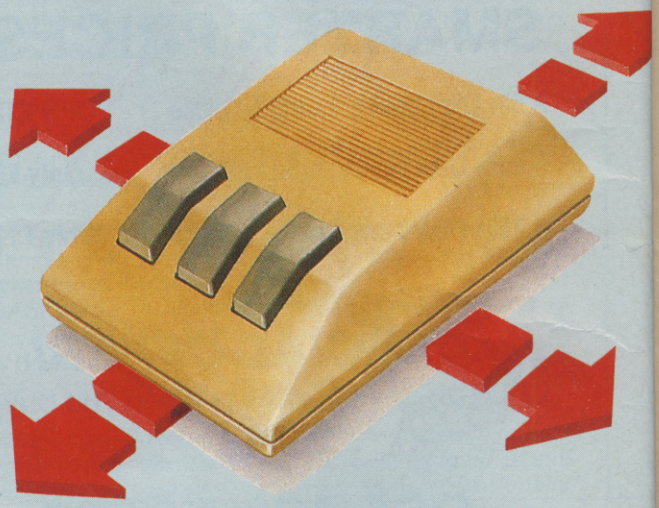

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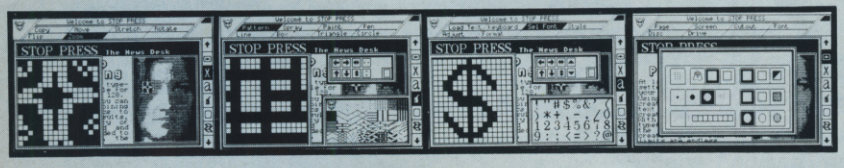
"The STOP PRESS utility is an interesting and useful addition and will be exceptionally useful for anyone who does ot own an art package or wants to find out how to use one."



You can buy the AMX Mouse together with STOP PRESS — or STOP PRESS alone, if you already have a mouse — direct from CCI READERS OFFERS at only £59.99 for the AMX Mouse and STOP PRESS or £29.99 for STOP PRESS alone. THAT IS A SAVING OF £10 ON THE USUAL PRICE FOR THE AMX MOUSE AND £10 ON THE USUAL PRICE OF THE STOP PRESS DESK TOP PUBLISHING SYSTEM.

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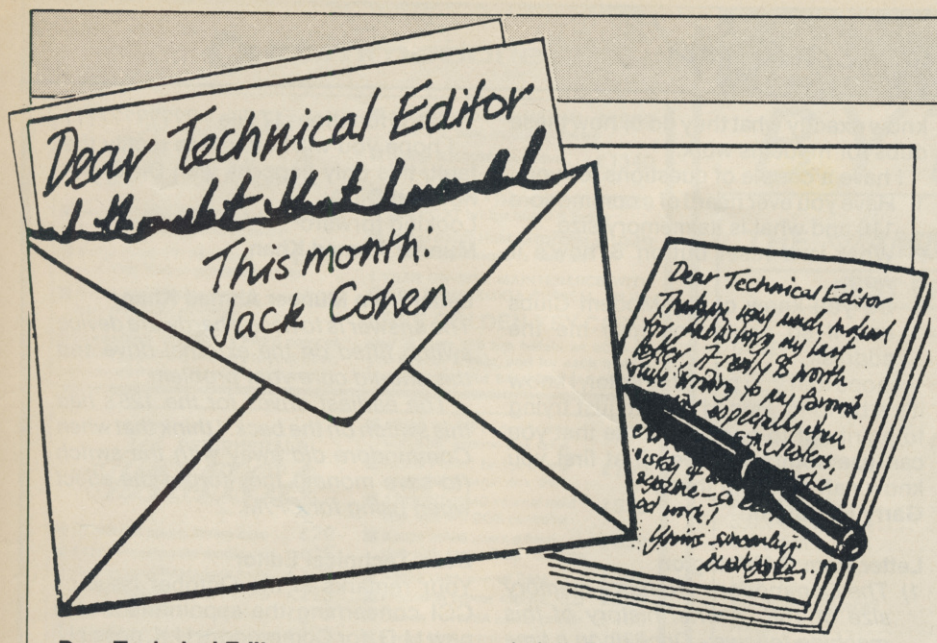

Dear Technical Editor
Could you please help me with some problems I am having with my printer, which is a 1526 (MPS 802).

1. I got it so that I could use it with "Print Shop" and make it work faster than a 1525, because the 1526(802) is Bi-Directional. I now find that it will not work wiith Print Shop or any other art type program, except Video Digitizer which has a separate routine for the 1526(802).
2. The user manual tells me that CHR$(1) and CHR$(129), are for enhanced print and unenhanced, yet I find that neither of these two CHR$ work in that mode, only CHR$(14) and CHR$(15). Am I doing something wrong???.
3. I notice that there is a Hardware package for the MPS 803 that gives it different print types and decenders, is it possible to get one for the 1526(802).

Thank you for your help.
A.E. Jackson

Letter from A E Jackson
1) The 1526 (MPS 802) is not a graphics printer but a suitable printer driver can produce graphics.

Such a driver is a necessary part of any program to be used with the printer.

2) The user manual is wrong and probably was written by a PET user who was used to CHR$(1) for double width print on the PET.

CHR$(14) is correct.

3) Contact Datel Electronics (phone 0782-273815) who produce an alternative character set ROM for the MPS 801 and see if they produce one for your printer.

Dear Technical Editor
I was recently advised that you can help me with some problems that I have encountered with my Citizen iDP-560CD Printer for my C64c computer.

Firstly, I cannot get the unit to print information from the Database and Label Printer Modules of my "Mini-Office II" package, although it works perfectly with the Word Processor and Spreadsheet modules.

Secondly, can you tell me if the unit will perform high resolution dumps from the screen, for example with the graphics module of the package mentioned above.

Finally — where can I buy paper rolls for the printer. I have tried a high street computer store, a few business equipment suppliers, a cash register supplier, Citizen Europe Ltd and Datac, who advised me to try you.

I would be very grateful if you can help me.
Alan Reid
P.S. Please could you send me details about the paper rolls urgently.

Letter from Alan Reid
I have tried MINI OFFICE II with the Citizen IDP 560 printer. The database and label modules work perfectly.

I can only suggest that you read the manual carefully and follow the instructions carefully.

In order to print labels FIRST use the Database module to create the records necessary for label info to be extracted by the label printer program. That is press 'N' for new record then enter field names and definitions. e.g. 1 Surname 2 Firstname etc.

When finished press 'N' again to enter more records or STOP to exit. Then select 'Save all the records' option.

Remember one record for each different label required. Then LOAD MINI OFFICE II again followed by LABEL PRINTER. Select Edit format and complete the parameters as required. Select LOAD file and give it the name of the file saved in the database option.

Then select 'PRINT LABELS' and then RETURN on 'PRINT LABELS' in the print sub-menu.

It should print OK.

It seems that the printer does not support HIRES.

Regarding the paper rolls take the old roll to a good stationers where rolls made for other machines are usually available and one of these may fit.

You can also try ACTION Computer Supplies on 0800-333-33 (free call). They sell rolls normally starting at 3.75" width but they may have some 2.75 to 3.00" which is the size you need.

Dear Technical Editor
In your November Issue of Commodore a Christopher Smith wrote in with 6 pointers. Now I own a C16 and I do not know how to use a pointer. Please can you reply to my letter telling me exactly how to enter a pointer. Please mention every step from switching on the computer to playing the game.
Oldham

Letter from OLDHAM
You won't be able to use pointers in AUTO-RUN programs that are correctly written.

However for the others, here goes.

1. *Turn on the C16*
2. *Load Kickstart*
3. *Press RESET button for warm restart*
4. *Type Monitor and press RETURN*
5. *Type A 28A3 NOP*
6. *Press RETURN key twice*
7. *Type G2003. This is the GO command which executes the program at mc code address of 2003 hex*

I can't make it any simpler.
SYS codes are typed in basic.

Dear Technical Editor
Loading programmes from different cartridges
When changing from saving programmes on tape to disk, I invested in the KCS "Power Cartridge" which works superbly, but those items saved by "Freezing" have to be loaded with the command bload "PROGRAMME" and they cannot be loaded indepedent of the cartridge.

On saving a programme by "freezing", the "Power Cartridge" breaks it down into three parts title "programme#", "programme$", "programme%".

In an effort to enable loading of programmes which have been saved by "freezing" I bought the "Action Replay" cartridge from Datel but this will not load programmes previously saved by the "Final Cartridge".

Contact with Datel has brought no reply so can you help?
M.J. Hawkes

Letter from M J Hawkes
Because you have the POWER cartridge with which to RUN your saved programmes, why is there a problem?

As you know CCI does not support piracy and therefore I cannot help you to break systems in various cartridges.

I suggest that before buying any utility cartridge that you first write to the manufacturers asking if the saved programmes need their cartridge to RUN them.

Dear Technical Editor - continued

Dear Technical Editor
I have recently aquired a Commodore Pet system consisting of a 3032 computer, a 3040 dual disk drive and a 2023 printer can you tell me please if there is any way I can use the disk drive and printer with my C64. Also with the system came some disk based software (mainly business) can this be adapted to run on my C64- Any help you can give will be much appreciated.
W.P. Cleary

Letter from W P Cleary
This disk drive and printer can be controlled via a suitable IEEE interface such as that supplied by Brainbox of Liverpool (phone:- 051-220-2500).

The software can be adapted to run on your 64 but machine code programs, unless they can be reassembled with different kernal calls and routines added to make the most of the 64's features, will require a lot of work.

Basic programs are easily converted unless full of PEEK's, POKE's, SYS & USR calls.

Basic programs automatically load into the start of BASIC on the 64, but the reverse is not true.

Machine code programs will load to their correct address using LOAD"Prog name", 8,1.

If the address is the wrong one for the 64 (ie crashes the computer) then use a good disk monitor to change the LOAD address first.

Dear Technical Editor
I am a Soldier serving in Germany and being of an age when no schools had computers when I left I picked up a couple of mags like yours and I eventually bought a computer.

It cost me £50.00 brand new and was a Commodore 116, the instructions were in german but I learned how to use the basic game playing bits it could take either C16 or plus 4 games and was similar to a plus 4 but smaller and with black rubber keys, I had it for about six months then I sold it to a friend and bought a 64 with english instructions which was a lot better some of my friends thought I was daft but I stuck at it and I eventually bought an Enhancer 2000 from EVESHAM MICROS and some games on Disks "the speed after those long waits for tapes was brilliant" I tried to do some backups using the freeze frame I got with the Disk Drive (no old told me about Formatting Disks) and it took me weeks to suss it out. I then bought stuff like Designer pencil and G.A.C. and putting programs from the magazines in the computer but I could never get these funny shapes right at first.

Of course I'm far from being any sort of computer wizard or anything like that but I enjoy messing about with my 64. I'm now looking at Modems but I don't know exactly what they do or how these dubs for modems work.

I have a couple of questions for you.

1 Have you ever heard of a commodore 116 and what is its memory size.
2 What is a reset button & how's it work.
3 Do you know of any Modem Clubs and if so could you give me the address.

I hope that you print this letter, I know it's a bit long winded but I'm just trying to point out to people like me that you can use computers even if at first you know naff all about them.
Garry Herrington

Letter from G Herrington
1) The Commodore 116 has a memory size of 16K. A brief history of this machine follows:- Once upon a time Commodore planned to produce a games computer called MAX to retail in the United States at $80. This eventually reached the market as the Plus 4 at a higher price than the C64 with the Commodore 16 as a cheaper spinoff.

On the way there was a stage during which the project comprised a range of these machines; the 116, 232, and the 364, being 16k, 32k and 64k of RAM respectively.

A small number of 116's actually built were all sold in Germany. The 232 never reached production and the 364 became the Plus 4.

2) The reset button is a device to restart the computer as if it had been turned off and on again.

The operation of the button causes the reset line to be connected to earth. This produces a cold start.

Other resets produce a warm restart according to the ROM.

3) Compunet sell membership including a modem and also Micronet (Prestel) do the same. Phone (01)-997-2591 and (01)-822-1122 respectively.

Dear Technical Editor
Recently atone of book shop here, I have seen your Magazine, and just after a quick look, found this a magazine for which I am looking for.

1) In November issue you have given hints to C-16 and plus 4 users in Europe to convert them in proper system, by changing the switch position from I to G, the same is true for C-128D or even if this switch is not built in, one could easly get it, just rotating the RF modulator chock head with the help of screw driver, for proper sound, but be careful not to disturb channel, and intensity chock setting, I have done same on Tosiba MSX to get it tune to PAL-B system.
2) I am facing one problem while using CP/M giving Dir B: following message appears.
CP/M Error on B: DISK I/O
Bdos function=17 File = ???????????

I hope you will help me to rectify the fault, this only happens with Dir B: but not with Dir A:
Looking forward
Muneer Ahmad Khan

Letter from Muneer Ahmad Khan
The answer is to have a hardware device switch fitted on the external drive and this should cure your problem.

The earliest drives for the 128's had this switch on the back. I think that when Commodore did away with the switch (to save money) they forgot the effect when using for CP/M.

Dear Technical Editor
Your remarks in the October issue of CCI concerning the appointment of a new M.D. for Commodore U.K. possibly heralding a change of policy has prompted this letter.

Commodore have so much going for it is a great pity that for the sake of arriving at a few basic customer orientated marketing approaches the company's full potential is not being realised.

PLEASE READ ON

Please put the influence of your magazineto good use by informing Mr. Franklin that:—

1. Commodore must standardise on one or two machines for the home user.

2. Pull back a little all the pandering to the middle-men who generally for motives of commercial greed limit the advancement of the home-computer. For example, your C64, C128 and incredibly the Amiga are supplied without duel disk drives. Users do not want to be locked into one software programme. Data disks must be quickly and easily backed-up.

3. Television sets should double as monitors if at all possible and all monitors should double as television sets.

4. Put Commodore resource behind a few approved programes including games programes in order to set standards generally.

5. Stop being so protective of software programmers — open up the mystic of programming and excite the generation of ideas from the customers at large.

CCI is doing a good job.

Please continue to fight for the customer and assist the better, progressively-minded retailers and middle-men.
Yours faithfully
J.D. Petrie, Glasgow

Letter from J.D. Petrie
We invite CBM to comment on this letter. (They can comment on anything else they like too!) We have offered them the space more than once!

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Feature

ROBTEK — MOVING INTO A HIGHER GEAR

While some big, well-established software companies may seem to dominate the buying public's attention and pcoket pocket, there exists a small number less noticeable software houses whose products have gained them a solid reputation and the respect of the general computer user. These often highly creative and entrepreneurial companies provide an interesting contract to the giants. Gradually, however, it has become more difficult for them to maintain their independence and many have fallen under the infuence of the majors. Ocean swallowed Imagine, Beyond was taken over byTelecomsoft, Martech and CRL are now "associated" with Electronic Arts, Hewson has links with Gremlin and Mastertronic and so on. But there is one company that is determined to sustain its independence and at the same time to take advantage of a new situation which it believes allows smaller companies to fight on very nearly equal terms with the really big players.

The comany is Robtek and the golden opportunity it perceives that allows it to move into a higher gear is the growing 16 bit, or more precisely, Amiga market. Robtek has been established for over two years and must be unique for a U.K. founded company in having its boss living outside the country. No, it is not for tax reaons or to hide from his two ex-wives but because Robert (that is where the Rob part of the company's name comes from) commutes between Brussels and London. This somewhat unusually long commuter's trip is due to the fact that in Brussels he manages the Belgian operation of another software house — Mastertronic. Neither he nor Mastertronic apparently considers this arrangement as likely to create conflicts of interest. Robert Zysblat is a non-stop enthusiast with clearly enough energy to run successfully the two jobs — Mastertronic and Robtek at the same time. It means though that he has to fly across to London from Brussels at least once a week but he denies that he finds it in any way tiring. He keeps fit by jogging around the Belgian capital and avoiding his ex-wives, he comments. He is obviously enjoying the double role enormously. He has however, in the U.K. two senior colleagues: Paul Share, Robtek's Technical Director and Mike Segrue, ex-Argus and now Robtek's Sales Manager. Both are highly experienced in Robtek's markets.

"Many thought that was wrong because games are not designed to be played without the 'lose' element"

Robtek, its founder declares, has not been visible enough to the general public. One reason for that may have been the rather unfocussed nature of its early products. There seemed little connection between many of them and no specific area in which it chose to concentrate and in which it could be easily recognised. Perhaps the most well-known and successful product it has marketed was The Game Killer. The cartridge aroused considerable controversy at the time because it seemed to lead into areas that were somewhat dubious, particularly in allowing game-players to get "infinite lives". Many thought that was wrong because games are not designed to be played without the 'lose' element.

Zysblat has clearly enjoyed the controversy, points out that it is now accepted that it is the choice of the player whether he or she wants to win the set way or to take a short cut through the obstacles. The Game Killer is still a treasured tool for many games players.

Zysblat maintains that there was nothing wrong with selling a product that allows you to play a game without ever being killed. He uses The Game Killer to exemplify the creativity that companies like Robtek can offer. "We're innovators!" He declares. "We like to do things that nobody else dares . . . Robtek's role is to do things that are difficult . . ."

That is not a statement that the general run of U.K. software chiefs would care to make. As cautious businessmen they certainly do not want to try to do the difficult. It is a statement that echoes the recent comment to CCI by Trip Hawkins who built Electronic Arts into possibly the world's biggest entertainment company. He said: "It's fun being a pioneer". He made Electronic Arts an international success by the same eagerness for innovation that Robtek seeks.

Ironically, the Robtek name may become slightly less noticeable in future, irrespective of the company's success. For it now has two labels that it sees as emerging as brands in their own right. It is beginning to promote forcefully Diamond Games and High Tec a recognisable labels of quality. Diamond is to be Robtek's major games brand and High Tek is intended to emerge as a power in popular business software.

"These will be games, Robtek claims, that will offer super value, i.e. good quality games at virtually budget price"

Diamond is being given a strong push to bring its name and products before a wide public with an alliterative slogan modestly claiming to create "Decent Games". However, it is also pouring on the hype, starting with a competition in this issue of CCI where it is giving away £5,000 worth of diamonds.

Robtek's intention is to release about six games a month on the Diamond label. There will be games, Robtek claims, that will offer super value, i.e. good quality games at virtually budget price.

The first releases planed are the excellent Pinball, Diablo, Star Wars, Galaxy Flight and Jigsaw Mania. All of these games are for the Amiga. Robtek has in the past published some 8 bit games, normally for the 64, but it sees the very low price, mass market more the province of a Mastertonic-style

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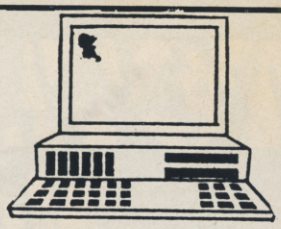
CBS COMPUTERS



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The DX7 Mk II

Ian Waugh plays around with Yamaha's new synthesiser and tells you how

Do you want to play real — or rather synthesised — music with the help of your computer?

The most popular synthesiser in the world! That's the title which can be claimed by Yamaha's DX7 synthesiser, owned by over 180,000 people and seen every week on Top of the Pops. How do you improve on that? Simple, bring out a Mark II.

Back in 1983, the original DX7 introduced us to the clear, clean-cut digital sound of FM synthesis. It excelled at percussive and acoustic instrument sounds but it was never the easiest synth in the world to program. Fortunately, independent suppliers have produced plug-in ROM packs by the hundred so there is no shortage of new sounds if you don't want to get to grips with programming. Many top keyboard players, in fact, use pre-programmed voices or even employ a DX7 programmer to produce voices for them.

Yamaha's newest synthesiser comes in two flavours, the DX7IID and the DX711FD — the FD has a build-in disk drive, the D doesn't. They both have a five-octave pressure and velocity-sensitive keyboard housed in a stylish black plastic case. The push button controls are just that — buttons — not the membrane switches of the original DX7. FM programming is still as difficult but the new keyboards have larger and better displays so the programming process is easier.

The DX7II's maintain compatibility with the DX7 in that, with the aid of an adapter, you can plug in DX7 ROM packs. It doesn't work the other way, though, as the new machines have features which the old DX7 can't duplicate.

For example, although they are both 16-note polyphonic (that is, you can play 16 notes at once) the new instruments are bi-timbral which means you can have two voices of 8-note polyphony instead. There are separate outputs, too, so you can pan them across the stereo image with the new Pan feature.

Yamaha still look upon their keyboards as primarily performance instruments and it's a great shame they didn't see fit to incorporate a greater multi-timbral facility such as that found in Casio's CZ synths. It would have endeared them to the hearts of computer users everywhere and they would have sold at least one more instruent (to me!).

The two voices, however, can be detuned to produce fatter sounds and there are now also 16 LFOs (Low Frequency Oscillators), one for each note. A Random Pitch Depth Control makes voices seem to drift a little out of tune, just like 'real' instruments. Digital sounds can be very harsh and these features help make them warmer.

A new and novel feature of the DX7II is Fractional Operator Level Scaling. Forget the name! What it does is to let you make groups of three notes sound different to those around them — brighter, for example. Another addition is micro-tunings which include Greek, Baroque and Eastern note divisions. There have always been musicians keen to explore micro-tunings but suitable instruments have been rather thin on the ground.

You can now store performance parameters with each voice and Yamaha have also improved the FM circuitry so there is a lot less noise. Recording studios will love this.

On the MIDI front, the new keyboards can transmit on any channel (unlike the DX7 which was set to channel 1). Local Control has also been implemented. This lets you separate the controls (i.e. the keyboard, etc.) from the sound production side. Coupled with sockets for two foot controllers (not supplied, unfortunately), Pitch and Modulation wheels and a hots of performance controls, the DX7II could form the centre of a complete MIDI set-up as a Master Keyboard.

The DX7 Mark II is not a new instrument, rather it builds upon the familiar and proven success of existing DX7/FM technology. It corrects mistakes in the old instrument and adds more improvements suggested by feedback from DX7 users.

Although existing DX7 owners may find little reason to upgrade — depending upon the depth of their pocket — if you've been tempted to take the plunge and buy a DX7, the Mark II is the one to go for.

The recommended price of the DX7IID is £1,699 and the DX7FD with built-in disk drive is £1,899.

More information from your local music shop or Yamaha-Kemble UK Ltd., Mount Avenue, Bletchley, Milton Keynes MK1 1JE. Tel: 0908 71771. ***I.W.***

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Mapping Out the Adventure

Peter Gerrard, in the second part of his fascinating series tells you not only the secrets of adventures but gives you the hints and the tips you need to write them successfully.

Having got our parser sorted out last month, this time around we'll turn our attention to the problems of mapping the game out, getting the player moving around the game area, and perhaps the most important part of all, finding the idea of your adventure in the first place. Taking them in no apparent order, we'll begin by looking at possible sources of inspiration for adventures.

It's been said that everyone's got a novel in them, and the same could also be said of adventures. Everybody is capable of producing at least one good adventure. Some people, happily for them, can produce a seemingly endless stream of adventures (Infocom and Level 9 for instance), but even they had to start somewhere. Infocom's first game was something not very far removed from the original Colossal Cave, and that was a game called Zork. Now we have three Zork games and the promise of something called Beyond Zork to come; Andy Moss has probably already reviewed it! Level 9 started with a version of Colossal Cave (I believe, don't all write in and tell me I'm wrong), Scott Adams' first game was little more than a clone on Colossal, but nowadays there are so many Colossal variants around that to do another one would be to just add to the market. The only way to succeed now is by doing something different.

The enormously successful Guild of Thieves is a traditional adventure wrapped up in different clothing. You're exploring a strange land, solving problems and collecting treasures, the difference here being that you're a burglar trying to gain entry into the infamous Guild. The graphics on some machines are, of course, superb, but non-interactive. That is, they may add to the story line by giving you a pretty picture to look at, but other than that they play no part in the game. I usually turn them off anyway, having seen the picture once.

"It seems strange that virtually every adventure has you solving problems as a male"

Leather Goddesses of Phobos gave the player the option of going through the game either as a man or a woman, a novel touch in an otherwise fairly traditional (if somewhat outlandish) adventure. Why are there not more women in adventures, you may wonder. Infocom claim that 30 per cent of their market is female, so it seems strange that virtually every adventure has you solving problems as a male. One potential source of ideas there, methinks.

Hitch Hiker's Guide to the Galaxy rode on the popularity of the book (of the film of the play of the radio series etc.) and was not, to my way of thinking, Infocom's best adventure. Nevertheless, it sold enormously well, and if nothing else it gave the world the notorious 'babel fish' problem: a classic of adventure writing, in which the programmer is always that one step ahead of the player.

To give just one other example, Adventure Soft have cashed in on the vast popularity of the great Isaac Asimov to produce an adventure called Kayleth; Isaac Asimov's science fiction magazine presents, and all that. Little to do with Isaac, really, but sci-fi and books are just two other potential sources of inspiration for the beginner.

Be very careful with books, though, the copyright problems are immense. We can't all afford to splash out vast sums of money to publishers who, quite reasonably, want the best deal possible for themselves and their authors. Even if you only produce a game to hand out amongst friends, if it's based on something that's in copyright then you are breaking the law. A book is all very well for sparking an idea, but don't follow it slavishly. Try the Bible. He won't sue, but don't be blasphemous. Not everyone will find it funny, and there's no point in limiting your market before you start. start.

If you're going to go in for spoof/parody games then again you'll have to be careful about the copyright laws. A spoof isn't any good unless it's both funny and based on something recognisable, but the person who produced the something that is recognised might not like it, and is perfectly entitled to sue you.

Something that I'm personally finding more and more useful as a source of inspiration is maps. By that I mean Ordnance Survey maps and the like, still tremendous value even at the £2.90 I paid for one the other day. All you have to do is look at the thing, and ideas seem to fly off the page at you. Mind you, you'll probably find yourself having to buy two copies if you're anything like me; one to look at and use, and the other to draw on when defining the adventure area.

Using maps in this way doesn't mean that all your adventures have to take place in modern times on the planet earth. You can change the time scale to suit yourself, moving either forwards or backwards. Try and imagine the scene, say, five hundred years ago, or if you

want something sci-fi then try locating some of the features on another planet, or satellite or something. The map will remain the same, but you'll just have to make a few names up. Somehow Giggleswick doesn't sound like the kind of name that Lunar explorers would use.

One last look at potential sources of inspiration before we get down to proprogramming again. First of all, there have been very few successful horror adventures (Lurking Horror, despite what some people have written, is an exception to this rule in my opinion), and what great scope there is in that particular field. Secondly, there doesn't seem to be that many adventures written about modern times and realistic situations. Bureaucracy springs to mind as one title, but I can't think of many more.

Just by observing the real world you can quite often come up with a few ideas of potential games, and a lot of adventures rely on just that one good idea to carry the whole game through. Make sure the game doesn't run out of steam half way through, though, as some have a habit of doing. I think some adventure writers, when they run out of steam, stick a totally unnecessary maze in, and as we all know some mazes in games are absolute kills, too complicated without any justification for there being in the game in the first place. Use mazes by all means, but don't make it so that you have to type 73 moves in the correct order just to get through the thing. Infocom, you naughty people, you know what I mean.

"People have all sorts of ways of controlling the movement of the player in the game"

But back to programming, and mapping out your adventure and getting the player moving around in it.

People have all sorts of ways of controlling the movement of the player in the game. The method that I'm going to be showing you has one major advantage over a lot of other systems; it is easy to use and understand!

First of all, you need the room descriptions. For now, if you haven't got 64 such descriptions lying handily around, or you can't be bothered typing them all in, we can use a simple "YOU ARE IN ROOM NUMBER" message, which at least will tell us that we are managing to move the player from one place to another, provided of course that we follow the message with the room number itself.

However, the way in which we could do that (44 PRINT "YOU ARE IN ROOM NUMBER" CP for example, where CP gives you the player's current position) is markedly different from the way in which we would print up the actual room descriptions for the player to read (44 ON CP GOTO . . . etc, where the dots would be replaced by line numbers indicating which line contains which room description, is just one way of doing it), so do leave a nice wodge of code free so that we can later put the room descriptions in there.

But the problem is, how do we get a value for CP? Let us assume that the player is going to start the game at location number one. At the start of our program, then, we would have a line declaring CP to be equal to 1. Then, we could have a group of lines like the following (this is also assuming that you're using the parser from last month, although that's up to you of course!):

```
6 VB$(5)="N":VB$(6)="S":VB$(7)="E":VB$(8)="W"
1001 IF VB<5 AND VB>10 THEN 1050
1050 IF (VB=6 OR VB=8) AND CP<64 THEN CP=CP+1:GOTO 44
1051 IF (VB=5 OR VB=7) AND CP<>0 THEN CP=CP-1:GOTO 44
1052 PRINT "YOU CAN'T GO THAT WAY.":GOTO 44
```

These are just being used as examples, and don't have to be followed slavishly, by the way.

From the above, you can see that we've defined 4 verbs to be equal to the four compass points N, S, E and W. You might like to include VB$(1)="NORTH", VB$(2)="SOUTH", and so on, to give the player the option of typing either 'n' or 'north' when he wants to move in that direction. Then, line 1001 checks to see if the verb typed by the player corresponds to one of these movement verbs, and if it does then go to line 1050. Change the VB>5 to a VB>0 if you've added the longer versions of the words.

Now, lines 1050 to 1052 are most definitely NOT the sort of thing you'd want to include in your adventure! But, as a starting point, it will let you check all your descriptions. Here, if the player has typed in verb 6 or verb 8 (i.e. he wants to go south or west) and the current location number is less than 64 (this assumes a 64 location adventure) then increase it by one and go back to line 44 where we could print up either our YOU ARE IN ROOM NUMBER CP message, or go off

"If none of these conditions are true then tell the player that he can't move anywhere"

the line that prints up the CPth room description. Similarly, if the player has typed in verb 7 or 9 (i.e. he wants to go north or east) and the current location number is greater than zero then decreases it by one and go back to line 44 again. Finally, if none of these conditions are true then tell the player that he can't move anywhere.

This, as I said, is only useful in allowing you to check your room descriptions, since we don't want players moving happily throughout the entire game without a care in the world or a problem to solve. So, we must have some way of controlling movement and getting the player going in the right direction.

If we define an array P%(64,4), we can achieve this control. Suppose that from location 1 the player could go north to nowhere, east to location 2, west to location 3 and south to location 4. Highly improbable, but it will do as an example. We could then define P%(64,1) to equal zero, P%(64,2) to equal 4, P%(64,3) to equal 2 and P%(64,4) to equal 3. In other words, we use the four elements of the array to represent the movement directions north, south, east and west; the order in which the verbs were originally typed in, if you recal. Thus P%(CP,MO) would give us the location that a player would end up in if he were to move in the MO direction from location CP.

It's easier to see by example!

```
1050 VB=VB-5:IF P%(CP,VB)<>0 THEN CP=P%(CP,VB):GOTO 44
1051 PRINT "YOU CAN'T TO THAT WAY.":GOTO 44
```

The value of VB lies in the range 6 to 9, although if you were also using the values 1 to 4 you'd have to do another check. All we want to end up with is a number in the range 1 to 4, representing north, south, east and west respectively. Then, if P%(CP,VB) is not equal to zero, that's where the player is going to end up. So we put him there by declaring the new value of CP to be equal to P%(CP,VB) and go to line 44 to inform the player of where he's got to.

If the value of P%(CP,VB) IS equal to zero then there is no movement allowed in that direction (over a cliff, or into a bottomless chasm, perhaps) so again we tell the player so and go off to line 44 again as usual.

This sort of thing could easily be extended to cover some of the more usual problems that are encounteed in an adventure. For example, the need to carry a torch in certain locations, say locations 40 to 51. If the torch was being carried we could have a flag TC set, and by altering the line a little we could have something like:

```
1050 VB=VB-4:IF (CP>39 AND CP<52) AND TC=0 THE PRINT
"ONE MOVE AND YOU'LL FALL INTO A PIT".:GOTO 44
```

and have the rest of the routine do the check for movement allowed or not allowed as the case may be.

By this straightforward use of an array we can effectively control the movement of the player through our adventure, as well as setting up checks for torches or anything else you might care to include. with the aid of a little bit of thought when entering your room descriptions you can also effectively conjure up a wonderful image of where the player is and what he's up to.

All this assumes that you've got a map to take the figures from, but if you haven't, how would you set about drawing one?

If you're using an ordnance survey map for your inspiration then most of the work's already done for you. I assume that, when you're playing adventures and mapping them yourselves, you use the traditional 'box' approach, like this:

```
| Cabin |       | Lodge |
        |
| Walkway |
        |
```

and so on.

This tells us that we can leave the cabin by going east to the lodge or south to the walkway, the walkway has exits to north, east and south, and as you play more of the adventure you map get bigger and bigger. On a much scruffier scale (i.e. pen and paper, not word processor!) this is how I draw the maps for my adventures.

To take a real example, a game that two of us are working on at the moment. It started off life as a straightforward idea, and in the way that adventures have it has now grown to enormous proportions. It also uses a large portion of an Ordnance Survey map, but until

"They come in the form of a separate file that is just hauled in from disk at the start of the program"

the game's finished I won't tell you which one. There are about twelve sheets of paper (half A4 being a sheet) for the complete game, with four maps covering all the surface features. These were taken directly from the ordnance survey map itself, and the only reason that they cover four sheets is because I wanted to be as informative to my partner as possible.

The other sheets cover various things, like the inside of a house, the area underneath a cave, the area in a valley where we want lots of problems, and so on, with one final sheet being used to link everything up underground, there being lots of pot holes and caves dotted about the place. From this it is but a short step to getting all the components of our P% array. They come in the form of a separate file that is just hauled in from disk at the start of the program.

Map drawing, moving around the parsers, so it's about time we started adding some verbs to our adventure. Two of the most important ones are save and restore, two things that no adventure should ever be without, but until we've got a few more verbs added there's no point in discussing them just yet. Get those maps drawn, think about your adventure and possible location descriptions (text compression yet to come), and I'll see you all next month.

Peter Gerrard.

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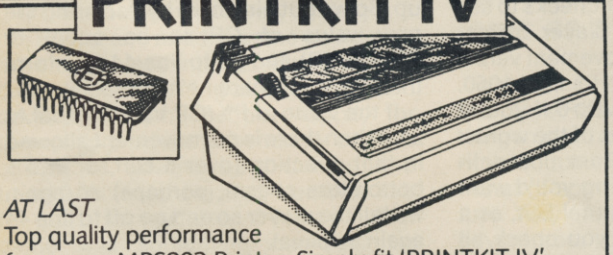

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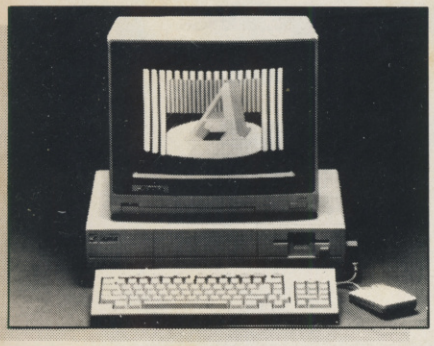

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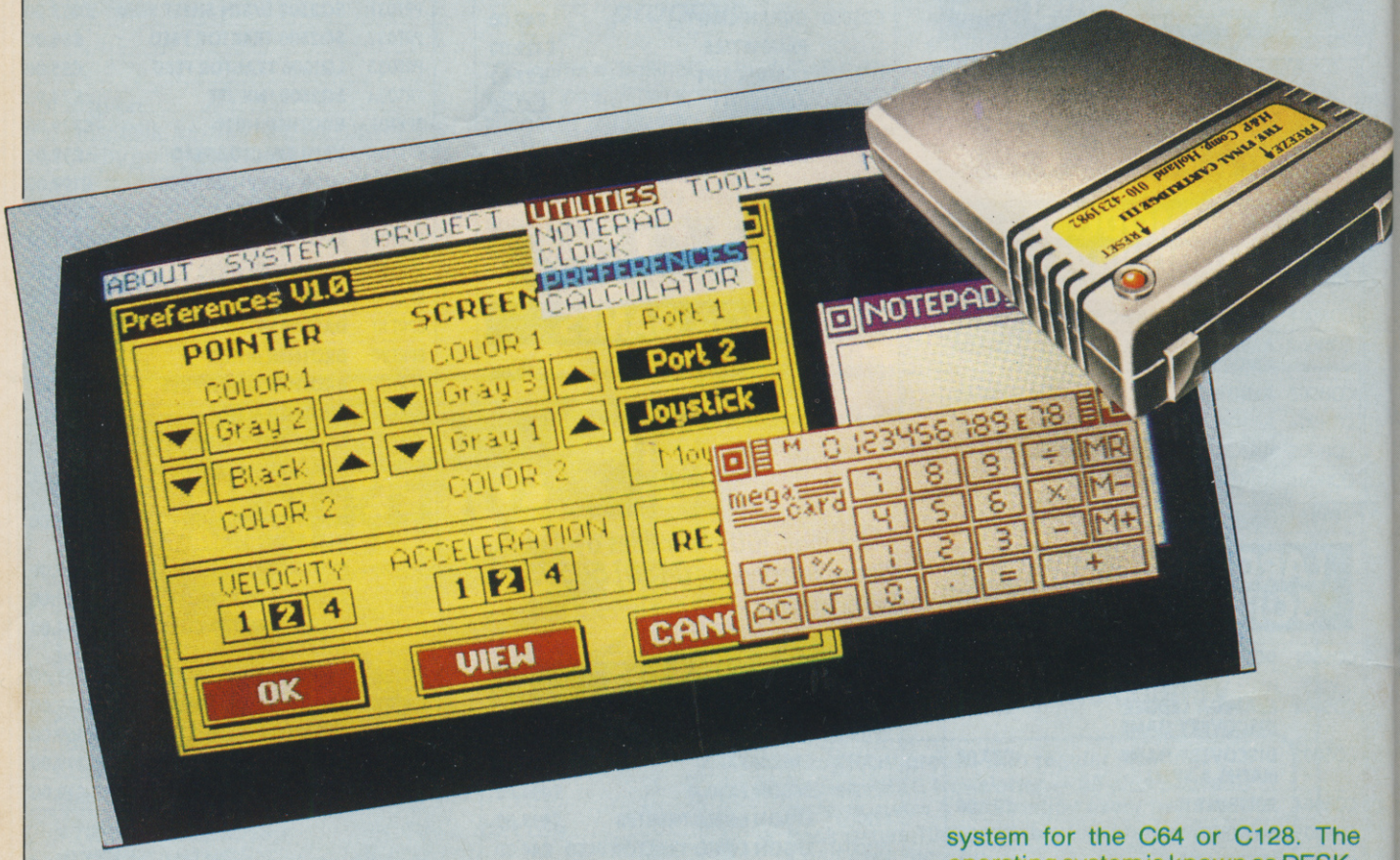

Every once in a while there comes along a particlular product which stands out from the rest. Here is one such product which will in time be considered a milestone in the history of C64 development.

There is as always a continuation of the development of hardware devices in an attempt that one day someone will eventually design and create the ultimate utility cartridge. I have personally used and seen many many cartridges but none can compare with The Final Cartridge III. If only I had more space here to describe in detail all the very many attributes of this, my choice for an Oscar in 1988. (Great praise indeed!)

At around £39.99 The FC III is a fine development of Riska b.v. better known to us as H & P Computers. They are based in the Netherlands but have been operating in this country for a number of years now. The designers seemed to have thought of just about everything. There is a great deal possible from what seems to be a small insignificant cartridge.

Desktop

A powerful 64k ROM based operating system for the C64 or C128. The operating system is known as DESK-TOP and this runs using the Amiga style Windows and pull down Menus for all you WIMPs out there. Now if you're sitting comfortably I'll begin to tell you of the wonders the FC III has in store for you.

There are many useful toolkit commands — easy to use disk commands — 24k extra memory for basic programs — 29 extra basic commands — a tape turbo which loads and saves ten times faster — a disk turbo turbo that loads fifteen times faster and saves seven times faster — a built in machine code monitor — a disk monitor — a calculator — *Uhhhh!...Pause for*

breath.... a clock — a centronics or serial printer interface to produce listings or hi-res screen dumps — a built in sprite killer — a reset switch — a backup freezer tape/tape or tape/disk any combination — cuddly toy (sorry ed.) — a notepad word processor. Impressed? So you should be.

WIMP

Most of the facilities of the FC III are supported by windows and menus. The pointer movement can be controlled by joystick, keyboard or by mouse if you have one. One point to mention here is that some mice can lock the keyboard so it is important to check before you buy one to complement this system.

When you boot up the system it is possible to set all your personal preferences for screen colours etc all of which can be changed should you choose to do so. The opening screen carries a menu bar across the top upon which you can have displayed the current time from your clock... There is also an alarm you can set to remind you when it is time you should go to bed... Very handy as I spent many long hours engrossed by this product as I'm sure you will be too!

Utilities

Disk operation window offers the possibility easily to execute commands for rename disk, run program, rename file, fast format, empty disk, validate disk, scratch files, view directories (up to three drives supported!)... for example you can browse through a directory, select and run a program using the pointer.

Basic preferences such as key repeat, cursor blink or keyboard click can all be selected if wished. One great advantage to C128 owners is that the numeric pad is operative for an easy to use calculator. It has all the functions of a desktop calculator and a very clear display. The printer window allows many possible changes to suit your setup such as printer type, interface either serial or indeed centronics. Captured screen dumps can be altered by varying densities or horizontal/vertical scaling. Colour graphics or mono, 8 or 24 pins.

Notepad is just one more thing to wet your appetite here you have a simple to operate word processing utility, files can be saved and retrieved from tape or disk simply and quickly. Word spacing is adjustable as with character spacing or line spacing. Text can be justified or word wrap styles. Boldface or normal and the usual screen editor functions are simple to grasp.

Basic

Basic is accessed by several different methods and FC III lets you in on some more goodies.... around 30 extra basic commands to be used in your basic programs. Scrolling through a basic listing up and down, find/replace any text string in a listing. Dump a list of all variables. Mread reads a chunk of memory from any location. Mwrite will allow you to transfer up to 24k to the extra RAM available in the cartridge. Many of the Commodore Basic v7. commands as well as more new ones... talking of which there is an old command to revive a newed basic program. Dappend, renumber and trace these are just a few of the little beauties packed away in there. Oh yes, there's Pack which will condense a program so it runs faster.

Freezer

Not the kind to keep your food stored in but an easy way to make a backup copy of your favourite prog. The results are at least three programs per disk on average. Maximum loading time around 25 seconds. Loads of other things are available from the freezer compartment such as a sprite killer for those of you wanting an easy way through shoot-em ups. Swap joyports or even produce autofire on an ordinary joystick. Each backup I made worked successfully and was able to run independantly or the cartridges.

Monitor

The monitor of the PC III is unique in as much as there are four functions — a ML monitor — disk monitor — character monitor — and sprite monitor. The ML monitor provides you with many extra commands to greatly simplify machine code programming. The rest of the functions allow complete control over character generation, disk drive memory and sprites design was never so simple.

Final comments on The Final Cartridge III. I was astonished to find so much packed into this fantastic cartridge. There is a large and well documented manual provided, crammed with a complete breakdown of all the functions available along with examples of how to implement all of them. It is well written and easy to follow. This product is so versatile so easy to use it deserves the highest commendation. Thank you H & P. If you want probably the best utility around check out The Final Cartridge III.

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Opinion

This month Jeff Minter takes on the Welsh Cold, Star Wars, an awkward blitter and destructive Hackers — and recommends some rather dubious repair methods.

Yow! It's getting cold down here in Woolly Welsh Wales, real afghan-and-fan-heater weather it is now, means that one tends to nip down the pub for a packet of fags and end up staying there for several pintsworth so as to be fortified for the chilly shambles back up the road. Great working and video-gaming weather though — nothing warms a Yak up like some Iron Maiden or Rainbow and a few games of Stargate . . .

Right at the moment my time is more or less equally divided between working on my video-manipulation routines for 'Space II', and playing 'Star Wars' on the other ST . . . it doesn't help that I can have Star Wars running as a background to my assembler, on the same monitor . . . it's all too easy just to have 'one quick game while it's assembling' and then get struck down by the 'aw, just one more go, I'm sure I can do better than that' syndrome. The Star Wars conversion itself is very good on the ST, with only one or two tiny mistakes in translation from the arcade original. It is, however, a LOT harder than the original arcade game, some of the extra difficulty being due to having a mouse, and not a proper flight controller, and some of it being due to the decrease of the frame projection rate during the Towers sequence, which makes for overcorrection and inaccurate targetting. Mind you, the Amiga version ought to be faster with it's Blitted linedraws, so the problem should be less on that machine . . .

Got my Atari blitter the other day! (And don't worry, I'm not going to start bleating on about 'the ST is now better than the Amiga blah blah blah) . . . no, nobody's perfect, least of all Atari . . . this tiny square of silicon turns up in a Jiffy bag, along with a note saying that it's a blitter, but no fitting instructions at all. 'Ah well, must be fairly straightforward', I think, so out comes the Yakly Mega, a screwdriver is wielded, and after getting through the Atari shielding cage (no mean feat in itself) the circuit board is revealed and yes, there's the empty socket, same size as my new bit of silicon. So, plop, in goes the blitter chip, right way round of course, then back goes the shielding, on with the case, out with the screwdriver again (isn't it odd that whenever you take a computer apart and then put it back together again you always have a couple of extra screws left over?), on with the power . . . drive light on . . . ummm . . . well, this blitter's pretty good at white screens . . . oops. No go, not even a bomb. So, out with the screwdriver etc. . . . and try and get th' damn thing back out of its socket. Have you seen these newfangled square chip sockets? At least with the old, centipede-style chips and sockets, there was room at each end for a screwdrver blade to be inserted so's you could lever up the chip from the socket. With these new devices there's no room to lever up the chip anywhere. It's stuck in there. As was my Atari blitter, stuck in a socket and stubbonly refusing to work. In the end I had to take the Mega round to an electrician friend of mine, who I assumed would have a special tool for removing such ICs, but no, he levered it out with two screwdrivers . . .

Anyway, now I have a Mega, still without blitter, but which works; and a rather natty square of silicon which I'm thinking of having made into a near-ring. Oh well, so it goes . .

Mind you, I heard of a lovely lo-tech fix for Amigas the other day . . . apparently a common glitch in the Amiga is that occasionally the screen goes green on boot-up, and no matter what you do, it stays that way. Well, a certain distributor of Amiga hardware was getting green-screen-Amigas back quite frequently, and had devised the following fix: turn over the faulty Amiga, give it a good hard thump on the underside, and then return it to the customer. Works every time, so I'm told. Loose chips are usually responsible for such easily-fixed glitches. Loose ROM chips used to be a real pain on early Atari STs, and an Atari employee explained that the official fix for loose-chip hassles, as used at the Atari manufacturing plant in Taiwan, was to pick up the faulty machine and drop it four inches onto the tabletop. I tried that one, and it works, too . . .

(Hmmm. That Trench Sequence is a lot harder than on the arcade version, too.)

It's a pity that the article I wrote a couple of months ago, after the PCW, was never published, 'coz a lot of what I said in it has become relevant just recently, for Amiga-owners . . . Basically, I was questioning the morality of hackers, explaining that I felt that the 'noble' Robin-Hood-esque hacker of yesteryear, who used to hack more in order to learn about the machine rather than to rip people off, was no more; now, hackers tend to be egotistical, destructive little vermin who circulate pre-release copies of unprotected games (and where's the skill in that?), rip game writers off left, right and centre just for the 'thrill' of having everybody see their hack screens (yeah, yeah, I know how to use a disk sector editor and do scrolly messages and setup yet another Jean Michel Jarre sample) and, basically, never do anything constructive. And now, those lovable hackers give us all Virus, on the Amiga. Virus is a nasty, insidious bit of software which is both annoying and destructive. Sure, it's a clever hack, but all I would like to ask the authors is: Why? If you're that clever, why not do something good with your knowledge? What possible reason do you have for wanting to destroy people's disks with Virus? Maybe you wanted to prove that a software-Virus was possible, but you could have done that without making the effects of it 'fatal'. Virus is, for me, representative of the state of mind of the modern hacker. Egotistical, and senselessly destructive. Okay, I'm sure that not all hackers are entirely bad, but the perpetrators of Virus are of the worst kind.

Right, another game of Star Wars for me now, and then on with my video manipulation code for 'Space II'. Some real tasty stuff there, and suffice to say that if you liked the 'Perspect' feature in DPaintII, you gonna love 'Space II' . . .

Merry Xmas. May the force be with you. This is Red 5, I'm going in! . . .

J.M.

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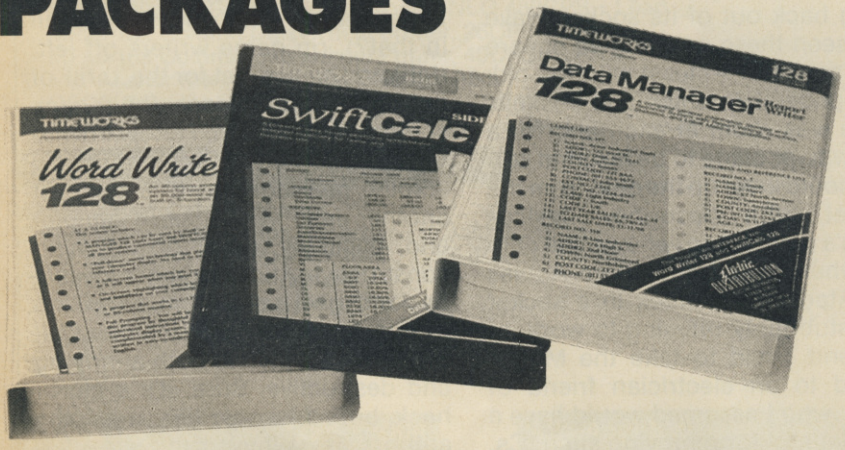

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FANTASTIC VOYAGE 2, DESTINATION BRAIN

Isaac Asimov (Grafton Books £10.95)

In 1966 they made the SF film "Fantastic Voyage". It was remarkable for two things. One was that it starred an until then little-known actress named Raquel Welch, the other that the special effects were stunning. The critics were lukewarm about the film — and about the actress, which goes to show how wrong critics can be! — but the public loved it. Interestingly, the new movie "Innerspace" deals in the same idea.

The original story was written by one Harry Kleiner but so successful did the movie become that no less SF "great" than Isaac Asimov was asked to rewrite the tale into book form. That, too, came out in 1966. Asimov himself has said that he was never quite satisfied with the finished novel, simply because he never felt it to be entirely his, although — like the film — it did very well and is, in fact, still in print.

"Fantastic Voyace 2" is Asimov's alone, and he can justifiably be proud of it.

The theme of this book is very similar to the previous one. Four scientists, in a kind of mini-submarine, are miniaturised and inserted into the body of another scientist but, this time, they are attempting to capture his thought waves, not trying to save his life.

Shapirov, a Russian academician, has gone into a coma after a previous miniaturisation experiment which he was conducting on himself went wrong. Only he has the knowledge of a method for making miniaturisation and de-miniaturisation rapid, low-energy and practical which is vital to the Soviet plan to send spaceships all over the Universe at many times the speed of light, and there is only one person in the world who has the skill to extract that knowledge from the comatose brain. That person is Albert Morrison, an American neurophysicist. Morrison has the ability to "read" thought waves by a combination of a computer program which he has developed and his own mind, which "receives" the brain patterns. Unfortunately, none of his fellow scientists believe he can do this because, try as they might, they have been unable to successfully duplicate Morrison's experiments.

The solitary believer in Morrison's ability was Pyotr Shapirov and now that he is in a coma the Russians decide that Morrison is the only man who can extract the particular knowledge they need from Shapirov's brain. So they kidnap Morrison, with the connivance of the Americans who are anxious to learn as much as they can about the miniaturisation programme and feel that Morrison can be "persuaded" to reveal all on his return, and the neurophysicist — protesting all the way — and his three companions are inserted into Shapirov's body and begin the journey to his brain.

Morrison is an unusual "hero". He's been a failure at most things, his career is on a downward slide, his wife and children have left him. In fact, he's a wimp. He's frightened of being miniaturised, scared when — along with his four Russian companions — he is inserted into Shapirov's body and, although he does do several courageous things it is only because he's forced into doing them by circumstances over which he has no control.

His four associates, two women, two men, are typical scientists, only concerned with what they can discover on their voyage — or so it seems at first. But, along with the currents in which they are travelling, there are undercurrents in their personal relationships which become apparent as the journey progresses.

Isaac Asimov's many fans will not be disappointed with "Fantastic Voyage 2". It is a worthy successor to "F.V.1" — even if there isn't a role for Raquel Welch!

D.M.

Sunrise Europe:

the Dynamics of Information Technology

Ian Mackintosh. (Blackwell, 0-631-14406-4, £17.50). John Collins looks at a book that describes a crisis that could affect us well into the 21st Century.

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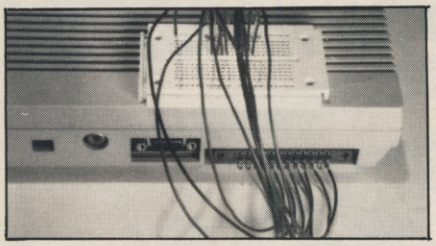
CONTINUED FROM PAGE 15 - INTERFACING

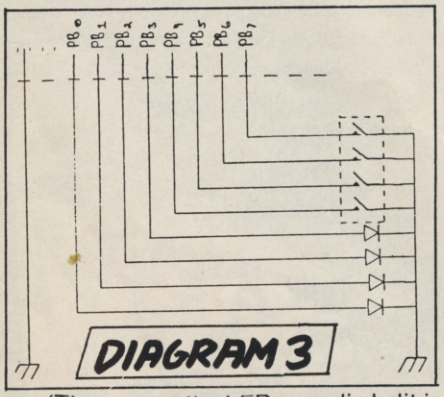
that doesn't require much soldering. Most of the soldering has been eliminated by using an experimentors plug-in breadboard (see photo and drawing). By using this board we can simply plug in our components and control lines. This board also facilitates changing the circuit by being able to pull out the components and replacing them with different ones.



Most of the parts required are available at your local radio and tandy store, except possibly for the 12/24 card connector. (see parts list). You can utilize a 44 pin connector that is available at Radio-Shack by cutting off one end, leaving 12 pins.

Take care in making your solder connection to the card connector. Notice that in addition to soldering wires to our user-port pins we have also taken a lead off an additional ground pin and the +5 volt pin. These lines will be useful later on.

Do not substitute the LEDs. The LED's used are micro-miniature, these were chosen because they don't require much power, and can be lit directly from the current available at the port. When you have completed the soldering and wired the circuit as shown, we are ready to continue. Turn off your computer (if it is on) and plug the card connector into the user port. Power up your computer, all the LED's should be dimly lit. If they are not, turn off the computer immediately, you've made a wiring error. Recheck your wiring and make sure the LEDs are in properly, facing the right polarity.



(The reason the LEDs are dimly lit is that, although the computer configures all bits as inputs on power up, the 6526 chip pulls the bits to 5 volts through a 10k resistor. There is sufficient current to dimly lt the LEDs).

If everything checks out you're ready to continue. Enter Command:
Poke 56579,255 Set up DDR (Data direction register) This turns all the bits an output bit
Poke 56577,20 Peripheral data register lites LEDs connected to PB2 and PB4
Poke 56577,0 Turns off LED's

In order to become familiar with the bit weights and their correlation to the pins type in this simple program.

Any number you input will lite the LED's corresponding to the bit weight.

```
10 POKE 56579,255
20 INPUT " INPUT BIT WEIGHT"; BW
30 PRINT "clr/home"
40 PRINT "THE NUMBER" BW "IS BEING DISPLAYED IN BINARY ON YOUR INTERFACE"
50 POKE 56577,BW
60 GOTO 20
```

This second program will count in binary. To make it run faster or slower change the value of T accordingly. To count to a value less then 255 change X accordingly.

```
10 POKE 56579,255
20 FOR X=0TO255
30 POKE 56577,X
40 FOR T=1TO255: NEXT T
50 NEXT X
60 GOTO 30
```

We now have some experience outputting binary "1"s. Now let's reconfigure the port. First turn off the computer. Remove the four LEDs connected to PB4 thru PB7 and replace it with the 4 position dip switch. (see Diag 3) Enter Command:
Poke 56579,15
DDR set-up
configures PB0 thru PB3 as outputs; PB4 thru PB7 as inputs turn all the switches on. Enter Command
Print Peek (56577) <return>
A "0" will
be returned. Turn off the switch connected to PB4 and re-enter command:
Print Peek (56577) <return>

Now the number "16" has been returned. You should know by now that the number "16" represents the bit weight for that pin. But the question begs to be asked, "Why is it when you turn the switch off that the computer reads a binary "1" at the bit location?" The answer is the same as why the led's are dimly lit on power up. When our switch is turned on it is connected to and pulled to ground (0 volts). When the switch is turned off, the line is pulled up to + 5 volts (binary 1) by the 6526 chip though a 10k ohm resistor. To become more comfortable with inputting enter the following program

```
10 Poke 56579,15
20 D=Peek (56577)
30 Print "clr/home" D "This is the bit weight on your interface"
40 GOTO 20
```

By turning various switches on and off the bit weights are displayed on the screen. Let's do something a little interesting press the RUN/STOP key and enter: Poke 56577,5. The led's connected to PB0 and PB2 are lit, enter RUN notice the bit weight of 5 is added to the display.

Now let's try something a little more interesting; enter the following program. When bit 8 (dip switch connected to PB7) is turned on the leds connected to PB0 to PB3 will start counting. No other bit has any effect. This is accomplished by masking all bits except bit 8, and reading it's bit weight.

```
10 Poke 56579,15
20 For X=0TO15
30 D=Peek (56577) AND128
40 If D=0 GOTO 30
50 Poke 56577,X
60 For T=1to100:nextT
70 NextX
80 GOTO10
```

To fully understand this we must look at some logic instructions. You may skip this section if you feel it's too difficult, go directly to the circuits listed after. But do come back after you feel comfortable with all the other material present. This logic section will enrich your ability to design and configure the user port to you needs with the minimum amount of instructions.

LOGIC

There are two logic instructions available to us from basic. That can be used to set (binary 1) or clear (binary 0) specific bits on the port without affecting the other bits. They are "AND" and "OR" instructions.

When using these instructions, we are comparing the number in the register to the number we PEEK or POKE in the register. The results, can be used to make useful decisions and perform functions. For each set of bits compared there are four possible combinations.
0 0 0 1 1 0 1 1
Refer to table 3 to see the results of these two instructions.

TABLE 3

AND	RESULT	OR	RESULT
0	0=0	0	0=0
0	1=0	0	1=1
1	0=0	1	0=1
1	1=1	1	1=1

By studying the table, two conclusions can be drawn.
1) The results of an "AND" instruction is "1" only if both bits are "1", otherwise the results are "0".
2) The results of an "OR" instruction is

CONTINUED ON PAGE 55

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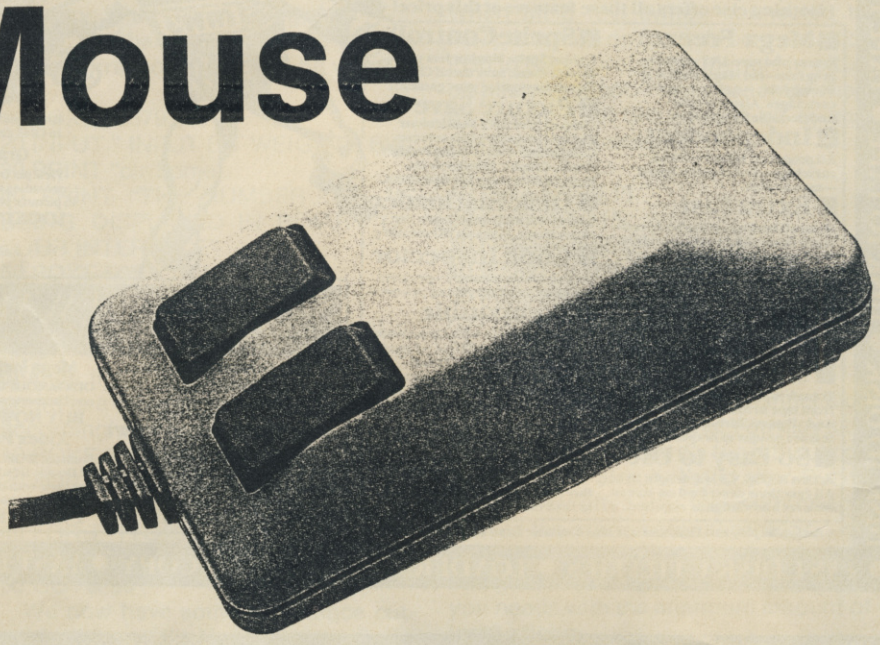
Some exciting new products are beginning to arrive, especially for the 128. Andy Eskelson reviews two — the new Commodore Mouse and an outstanding 128 graphics program.

1351 Mouse



At last the "official" Commodore mouse has arrived in the U.K. and as we have come to expect it is fairly incompatible with other mice such as the NEOS. But this is not a bad thing as a very simple system for reading the position of the mouse has resulted by this design change.

Physically the 1351 has the same bottom molding as the NEOS and the same size ball, the top molding is more like the Amiga mouse. It has the normal two buttons and these are set almost flush with the top surface. They have a good positive click action and feel as if they will stand a lot of hard use. As a matter of personal choice, I think that the design of the buttons could be improved somewhat, as the NEOS mouse is very much more comfortable to use than the 1351 (or the Amiga mouse for that matter) but as I have said it is a personal choice.

The operating principal of the mouse is so simple that it is surprising that no one else has used it before. The 1351 looks like an analogue joystick! this means that the mouse does not upset the keyboard and can be used in both joystick ports. There has been one compromise because of this, the resolution of the mouse is not as good as some others. This is due to the limitations of the SID analogue registers POTX and POTY only allowing 255 (8 bits) resolution, but with some sneaky programming this is no problem as programs such as Basic 8 have proved.

The documentation that is provided with the mouse is.... well not up to the usual Commodore standard at all which is generally awful! This has absolutely EVERYTHING in it that you could want, with perhaps the exception of a circuit diagram of the mouse! Included are Basic drivers for the C64 and the C128, and a fully documented machine code source listing of a driver for the C64 and C128 as well. What can one say but well done CBM! The price of the 1351 is £29.95.

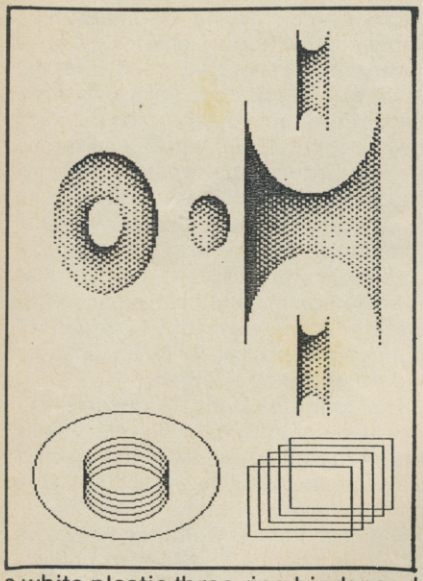
Contact: Financial Systems, 2nd Floor, Anbrian House, St. Marys Street, Worcester WR1 1HA. Tel: 0905 611463.

Basic 8

Basic 8 is a highly advanced graphic drawing system for the C128 computer. So what.. there are lots of graphic packages about. Well this one is a little different. The C128 is a very under used computer especially in its native C128 mode, and this program is designed to run in this mode. What makes this program very unusual is that it operates on the 80 col screen! and to see high res, colourful graphics is this mode is fantastic.

Before I get to the program itself there is a little hardware problem that needs to be cleared up. Basic 8 makes use of the video RAM that the 80 col VDC chip has. THIS RAM IS NOT MAPPED INTO THE C128 SYSTEM AT ALL. So it is awkward to see how much of this RAM you have. If you have a C128 then you have 16K. If you have an OLD C128 (one with a fan and handle) you also have 16K, if however you have the NEW C128 (no fan, no handle) then you have a massive 64K of VDC RAM.

WALRUSOFT have found a way to reprogram the VDC chip to produce some very fancy graphic commands that can be used in a normal basic programming environment and some of the commands are fairly easy to get the hang of. The Package is presented very nicely in



a white plastic three ring binder and is 180 pages of well produced and VERY well laid out text. What a change to find a manual that has had some time spent on it. Almost everything was easy to find. There are 53 primary commands that have been added to the C128 Basic, and most of them have various operating modes.

When you first boot up the master disk, you are presented with a simple menu requesting you to create a set of workdisks. You can create the Editor disk, the Basic Paint disk and a Runtime disk. The runtime disk is rather special, it enables you to put a Basic 8 program onto this disk and when activated it will create a Run only program. It cannot be listed or edited, but you are given full permission to sell or give away Basic 8 programs in this format with no royalties payable to WALRUSOFT. A very refreshing approach to this type of software.

As this system is designed to work on the 80 col screen it is very disruptive to the normal running of this mode. But depending on the amount of video ram you have you can produce graphics that make the normal 40 col screen look sick. The graphic modes range from 640 * 200 monoachrome to 640 * 104 with a color cell size of 8 bits by 2 better resolution is obtained with expanded video ram. Eight common screen defenitions have been preset for use. All this sounds great, but there are a few problems with this program, the main one is that it is so advanced that it has a 3D capability and trying to warp your mind around 3D transformations is hard work. With some hours of practice you can get used to the system, but it is a big jump and is most definitely not for the beginner.

As well as the normal line, box and circle type commands a very nice set of solid shapes have been included, they are based on the work of Richard Rylander, and the results of which are superb. The program supports a host of devices, there are 5 main printer drivers that will support just about everything from the Epson type printers to the Canon PJ1080 ink jet, as well as the standard CBM types. The Epson driver is the default, any other must be BLOADed into memory when needed. In practice the operation is very easy. Basic 8 also supports the 1351 mouse and joysticks. (The NEOS mouse does not work except in joystick mode) The 128K and 512K rampacks are also supported this allows lots of buffers for working on various designs and speeds up operation greatly.

Bundled in with Basic 8 is a program written in Basic 8 called Basic Paint, this is a very nice ICON style drawing package, a sort of very advanced Cheese. When I ran this for the first time its speed did not impress me too much, BUT then I realized that it was running under BASIC! Bearing that in mind the speed is astonishing especially as all VDC RAM has to be addressed indirectly through the two VDC command registers! It is a very easy and well presented program that enables you to design and draw the shapes, structures and brushes that can be used in later under Basic 8 or you may choose to draw the whole design with Basic Paint.

To conclude, Basic 8 has some of the most comprehensive commands that have ever been incorporated into a graphic package, patterns, structures and brush facilites approach some of the Amiga graphic software that is about. If you have a use of this type of drawing package then this is the very BEST that I have ever seen. And the bonus of Basic Paint and the runtime disk system makes it all the better value for money at money at £34.95.

A.E.

Contact: Financial Systems, 2nd Floor, Anbrian House, St. Marys Street, Worcester WR1 1HA. Tel: 0905 611463.

CONTINUED FROM PAGE 52 - INTERFACE

"0" only if both bits are "0", otherwise the results are "1".

Our computer uses eight bit binary numbers, examine the following examples.

AND	OR
11010011 register	11010011 register
10000101 AND 133	10000101 OR 133
---	---
10000001 RESULT	11010111 RESULT

In program 4 we used the "AND" instruction to test a bit. Then made a decision based upon the results. Lets analysize how the program accomplishes this.

30 D=Peek (56577) AND128
OXXXXXXX register X=any Value 0 or 1
10000000 AND 128

00000000 RESULT Print Peek (56577) AND 128=0

This instruction compares the AND 128 with the number in the register. The only bit that can have a impact on the result is bit # 7. Because all other Bits are "AND" with 0, their results are 0. By setting bit # 7 we have the following scenerio.

1XXXXXXX register X 64 value 0 or 1
10000000 AND 128

10000000 RESULT Print Peek (56577) AND 128 = 128

With these two possible results, we can use a familiar basic decision command:

40 If D=0 Then GOTO 30

SETTING A BIT With "OR"

We can use an "OR" instruction to set various bits. It is very useful when we wish to set specific bits without disturbing the status of the other bits on the port. Examine table 4, any number that is "OR" with an "0" remains unchanged. Therefore if we wish to set bit 4, we can "OR" bit 4 with a binary "1" as our example illustrates.

10100010 register
00001000 OR 8 Command=Poke 56577, Peek (56577) OR8

10101010 RESULT

Try entering the following commands to get a better understanding.

Poke 56579,15 DDR Set-up
Pke 56577,3 lights Leds to PB0 and PB1
Poke 56577, Peek (56577)OR8 Sets bit 4 on without disturbing the status of the other bits

When we enter our last command the status on the interface has the two Leds light. This status remains unchanged as we set bit four on, as indicated by the light LEDs.

There are other interesting bit manipulations, but we do not have the time to explore further. For those interested in becoming more proficient, I advise to experiment on your own and pick up a book on ML programming.

Books

CONTINUED FROM PAGE 48

This polemic by a renowned international high technology consultant is aimed at creating polticial awareness of the need for concerted European action to prevent the countries of Europe sinking into the Third World through their failure to exploit the Information Revolution which is now under way. This Revolution is being led by the US and Japan, with Europe scarcely participating — except as a consumer for their products. Europe is becoming relatively poorer, and some countries are already unable to continue to support their existing social infrastructure. The failure of UK politicians to back Inmos (the chip manufacturer half-heartedly set up by the last Labour Government and sold off to Thorn-EMI by the Conservative Government) and the shortage of text books in schools are products of the same political myopia.

As the IT industry of any single European country is too small to compete effectively in world markets, transnational co-operation is a fundamental requirement. Under the Commission of the European Communities (whose Executive Vice-President, Viscount Etienne Davignon, contributes the Foreword) this has begun to happen. But, according to Mackintosh, not in the right way. European initiatives, such as ESPRIT and EUREKA, are focussed on the development of technology when what is really needed is the creation of market demand.

Part One, entitled "Seeds and Weak Beginnings", starts with a chapter summarising the development of electronics from the invention of the thermionic triode valve in 1906 to that of the 'monolthic' integrated circuit in 1959. This leads into a chapter on the development of the electronics industry in the US since 1960. A chapter about Japan's success, emphasising the importance of the long range planning undertaken by the Ministry of International Trade and Industry (MITI), is followed by a chapter recounting Europe's poor performance.

Part Two, "Economists and Calculators", projects recent trends through to the end of the century — technological oblivion for Europe, discusses new forces of change looming in IT, assesses the costs of catching up, and sets out the economic case for a multination European IT renaissance policy — which will be hugely expensive.

Part Three, "Trying the Measures", warns of the lure of easy options — inward investment to Europe from the US and Japan or trade links with these competitors, sets out the criteria which must underlie a European IT renaissance project, deduces that what is needed is the development over the next 20 years of a homogeneous broadband telecommunications network for Europe — Eurogrid, the discusses the practicalities of implementing such a project so that the benefits flow to European IT companies and not to their Japanese and American competitors.

The countries of the European Economic Community have poured money into propping up old industries (small-scale farming, steel, ship-building) while failing to invest in the new industries of the Information Revolution to ensure future prosperity. This lack of political foresight will now be immensely expensive to rectify but, if the political will to do so is lacking, we are condemning our children to the status of Third World citizens in the Information Society of the twenty-first century. Everyone concerned for Europe's future well-being should read this book themselves, make sure that their political representatives have done so, and badger the politicians out of their customary inertia into positive action. ***J.C.***

STOP TYPING THEM IN!

CCI Programs on Cassette— Disk

Many readers have requested the programs we publish in CCI to be available on tape or disk. They complain typing in pages of numbers is driving them crazy, and want, reasonably enough to get the programs the easy way. As regular CCI readers know, the quality of the programs we print is outstanding and covers a wide range of helpful utilities and other useful and entertaining material.

So we are now going to supply the routines from the pages of CCI on cassette or disk. Readers will be able to subscribe for a year's programs. The year's programs will be divided into quarterly cassettes or disks. Each tape or disc contains the full three issues' programs and will be mailed at the end of January, April, July, and October, 1988. Should the programs fill more than one cassette or disk, a further cassette or disk will be sent without charge. The cost of the complete year's programs, cassette or disk, is £12 (including p&p). We regret that at present we can only supply these for the UK and Eire.

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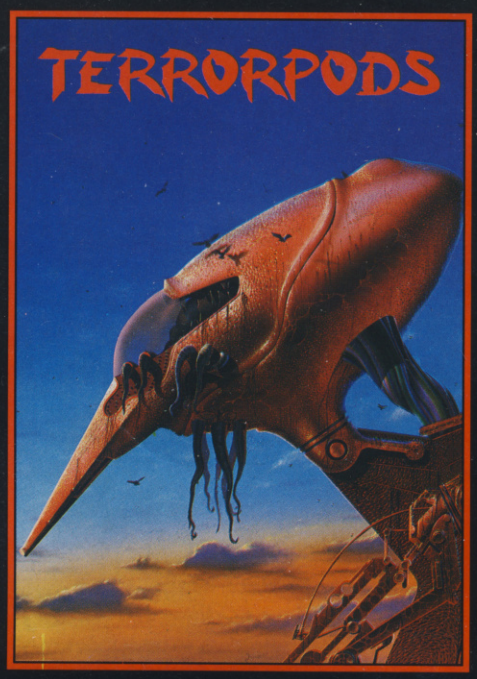

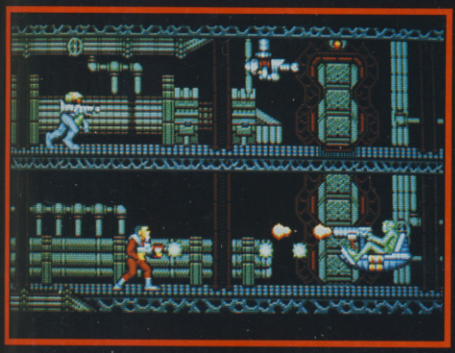

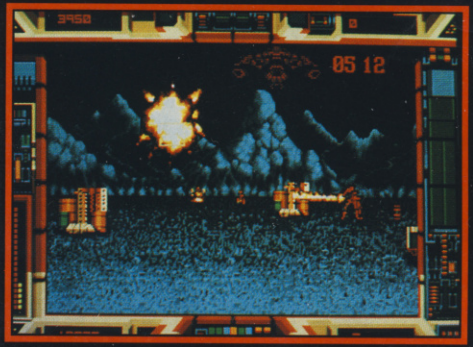

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All available for 512k colour, Atari ST, Commodore Amiga.

PROTECTING THE INNOCENT?

Graeme Kidd, ex-boss of Zzap and Crash examines what Maria Whittaker's breasts, blood oozing from a hockey mask, an adventure starring the Royal Family and Jack the Ripper have in common in the evolving world of computer games....

Sex 'n' violence, to a greater or lesser degree, have always been components of art, litreature and entertainment — from the Pompeiian frescoes, through the Rape of the Sabine Women to Shakespeare's Othello.

With the advent of new media, like film and television, the level of realism that could be achieved in the portrayal of violent or erotic acts reached new heights. The camera lens was capable of becoming voyeur by proxy, a force for good or evil depending on why the cameraman was pointing his equipment at a scene. Footage of the horros of the war in Vietnam, broadcast into homes across the globe, helped to end the carnage twenty years ago but now we are revisiting the jungle with Rambo and his friends — just for fun, and watch people get killed while we munch popcorn and cheer the hero on.

Any form of mass communication is a potential threat to the people in control of a social system, and arguably a threat to the very fabric of society itself if it is 'misused' —shortly after the first printing presses started churning out material the authorities began supressing material. The printed word (and printed picture) has attracted the attention of censors for centuries. With the advent of film, a visual medium, elaborate bureaucratic systems were rapidly developed in the 'civilised' world to enforce codes of censorship that reflected the prejudices of the people in power, and these codes of acceptability were enforced 'for the good of society as a whole'. There was a time, in the movies, when a respectably married couple couldn't kiss on screen unless each partner had one foot on the floor — a bit like playing a shot at snooker...

The critieria for 'acceptability' in film and TV censorship have relaxed considerably since the early days of the industry, but there are still limits set on what is and isn't acceptable for mass distribution. For a few years, the boom in video rentals allowed particularly explicit material to go on High Street release, but some hysterical publicity about 'Video Nasties' led to a clamp-down and the application of age categories by the British Board of Film Censors to films available for hire. Oddly enought, it appears that a film that gains an 18 rating for the cinema might suffer a few more cuts on video before it gains an 18 rating for the video library. Video libraries face prosecution if they don't follow the age guidelines on video films when hiring them out to youngsters — and stocking an unrated film could lead to a heavy fine.

Now, after a few flurries of protest in Britain about the suitability of the material found in computer games, (but more usually on the inlays) one company, CRL, has decided to go for British Board of Film Censors ratings for games, and has just collected an 18 rating for an adventure.

A compulsory rating system for computer games could be introduced in Britain along the lines of the catch-all German system that only allows games like Commando to be sold in sex shops (unless the name is changed and you are shooting nasty green aliens rather than enemy soldiers). It's unlikely to happen in the near future, and for the time being I would argue that the appearance of an '18' sticker on a computer cassette is more likely to attract the buyer's attention than to prevent impressionable youngsters being harmed by the pixellated material the game offers... Which is probably what CRL worked out.

When DH Lawrence wrote Lady Chatterly's Lover and when Stanley Kubrick filmed A Clockwork Orange, they ran into serious trouble. Despite the fact that both men were inspired to tell a powerful story which examined human motivation, and despite the fact that both men were themselves motivated by art rather than the profit potential, their works attracted the attention of the laws that prevailed at the time.

The fact that powerful imagery supports a marketing message in advertising is a well tested principle — and computer game marketeers haven't been slow to catch on. Original covers for Friday The 13th and Barbarian ruffled feathers in some chainstores and had to be modified to assuage the retailers' sense of decorum and acceptability, but the publicity so created did sales no harm... It was the packaging, mind, not so much the dismemberment factor that featured heavily in both games which caused the flurry of publicity.

It's a publisher's job to ensure that a book, film or computer game achieves maxdumum sales. If the work itself is good, thoroughly entertaining and is presented at a price that reflects reasonable value then it is likely to sell well provided it is promoted so that people become aware of the existence and nature of the product. Publicity is vital, and expensive if you have to pay for it. Great if you can get it for free — even better if you can get free publicity for a mediocre product that probably wouldn't sell on its own merits.

Home computers, with their limited memories, have limited capabilities for handling text and graphics and while there's room for atmosphere to be generated in an adventure game, the medium falls far short of film and video when it comes to the capacity to present graphic and disturbing imagery. The current levels of technology and expertise are unlikely to give rise to obscene, perverting or visually disturbing computer games.

It's difficult for a programmer or publisher to be 'irresponsible' when presenting material for youngsters to amuse themselves with in front of the computer screen — the medium itself provides the limiting factor. It's the concepts that are a bit dodgy — beating up or shooting animated figures on screen in combat or war simulations — rather than the on-screen imagery. And it's probably a bit too late for the lawyers or moralists to do anything about the concepts of death, damage and dismemberment that give rise to the majority of computer games

So far Maria Whittaker's breasts (more explicity presented elsewhere) plastic blood oozing out of a hockey mask and an irreverant adventure starring the Royal Family are all that have attracted attention — marketing ploys all, no-one went to a court of law over the issues. A few people were encouraged to part with their money, no doubt, when they heard the rumpus, which is probably why it was all started in the first place.

Computer software is far from being a means for mass communication and so it is unlikely to attract the attention of censors. A little disturbing really, when you reflect on the themes of death and destruction that underpin so much of what is on offer, and the ways of thinking they might encourage — but then killing aliens is harmless. Isn't it? *G.K.*

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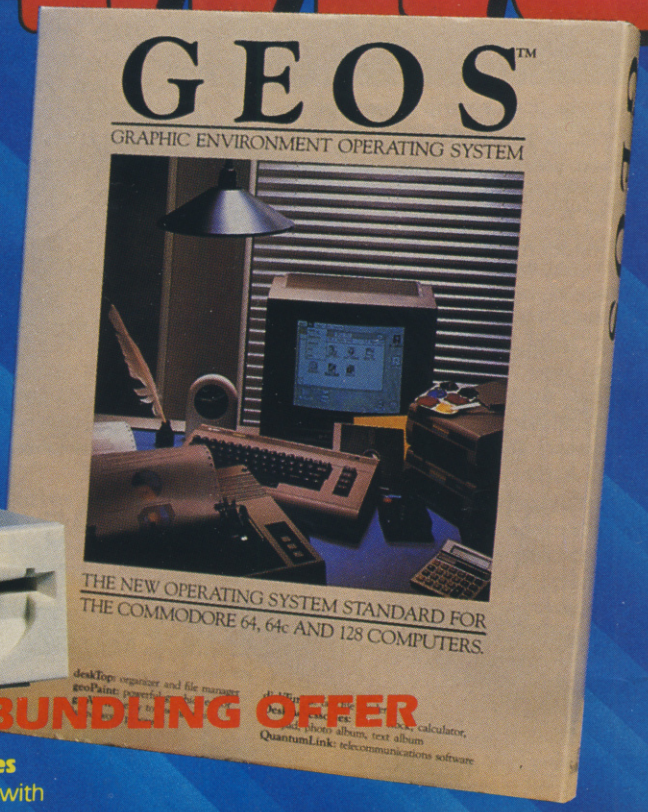

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RUN 64

". . . The Excelerator behaved admirably throughout. It does exactly what the 1541 does . . ."
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COMPUTE!'s Gazette

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Commodore Computing International

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Popular Computing Weekly

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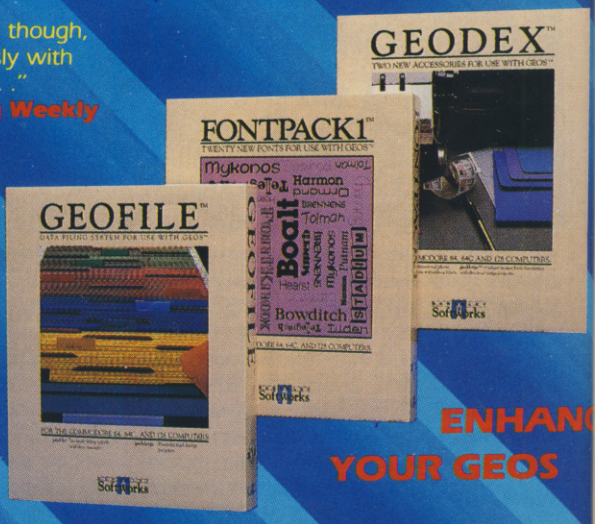

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"...the most exciting and lightning fast I have ever used..."
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- Evesham 3 & 8 minute nibblers
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Charts

It's practically all change in the charts as the big end-of-year releases come thumping in with eight new entries. The outstanding Combat School breaks straight in at the top spot. Solid Gold looks like being that for U.S.G. shooting through to Number 2. Ocean's Live Ammo leaps six places and California Games arrives late but great at Four. An interesting new entry is Sensible Software's Shoot 'em Up Construction Set and Microprose's Airborne Ranger flies high as breaker to Eight. Gremlin's Gary Lineker may prove the strongest soccer game of the year, coming at Ten. The U.S. Gold/Ocean/Gremlin group dominate the 64 chart with six out of the top ten places.

A new number one for budgets is Codemaster's Grand Prix Simulator, but Mastertronic's Kikstart hangs in there at Number Two. The Amiga Chart is as usual more stable and Audiogenic's Impact holds onto first place but there is a new fast moving entry with Grand Slam's The Hunt for Red October. The record holder for the longest ever period in the U.S. (around two hundred weeks!) Sublogic's Flight Simulator is waiting in the wings to make its move. Watch out for Arco's Grid Start. It could be a very fast mover!

C64

	GAME TITLE	COMPANY	Price	Rating
1.	Combat School	Ocean	★ £8.95	Awesome
2.	Solid Gold	U.S. Gold	★ £9.99	Awesome
3.	Live Ammo	Ocean	↑ £8.95	Crisp
4.	California Games	Epyx	★ £9.95	Awesome
5.	Renegade	Imagine	↓ £8.95	Crisp
6.	720°	U.S. Gold	★ £9.95	Crisp
7.	Shoot 'em Up Construction Kit	Outlaw	★ £14.95	Awesome
8	Airborne Ranger	Microprose	★ £14.95	Mega
9.	Star Wars	Domark	★ £9.95	Iffy
10.	Gary Lineker's Soccer	Gremlin	★ £9.99	T.B.A.

BUDGET CHART

1.	Grand Prix Simulator	Codemaster	★
2.	Kikstart II	Mastertronic	↓
3.	Arcade Classics	Firebird	↓
4.	Soccer Boss	Alternative	↑
5.	Joe Blade	Players	↓

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Feature

MICRONET MEMBERS HELP CHILDREN IN NEED

If you were one of the millions of the UK TV viewers who tuned into last month's BBC Children In Need Appeal telethon — the ubiqitous Terry Wogan on our screens once again! — then you'll no doubt have noticed the caption scrolling along the bottom of the screen from time to time informing Micronet (and Prestel) users that they could take part in the event with their micros.

Micronet, once again taking advantage of the medium they operate on — viewdata — were down at BBC TV Centre in Shepherd's Bush with an outside broadcast team comprising of eight computer terminals, thirteen people and plenty of dedication — the show went on until the early hours. From TV Centre they were able to collect pledges and donations down the phone lines via the Prestel computer network, allow subscribers to interview the celebrities in the studio and hold a huge on-line auction of over £5,000 worth of (mainly) computer goods.

As CCI goes to press the money is still coming in — but Micronet say they hope to have raised around £50,000 by the time the last penny is counted. "The response from our members was incredible," says Micronet PR man David Rosenbaum. "In the auction alone we received over 5,000 bids in just a few hours. To be honest we couldn't really cope with it all." One of the items offered was a Commodore Amiga so it's no wonder the auction was so popular! A variety of software, peripherals, and computers

Sharon Giles of Micronet helps members interview Nigel Havers of TVs The Charmer.

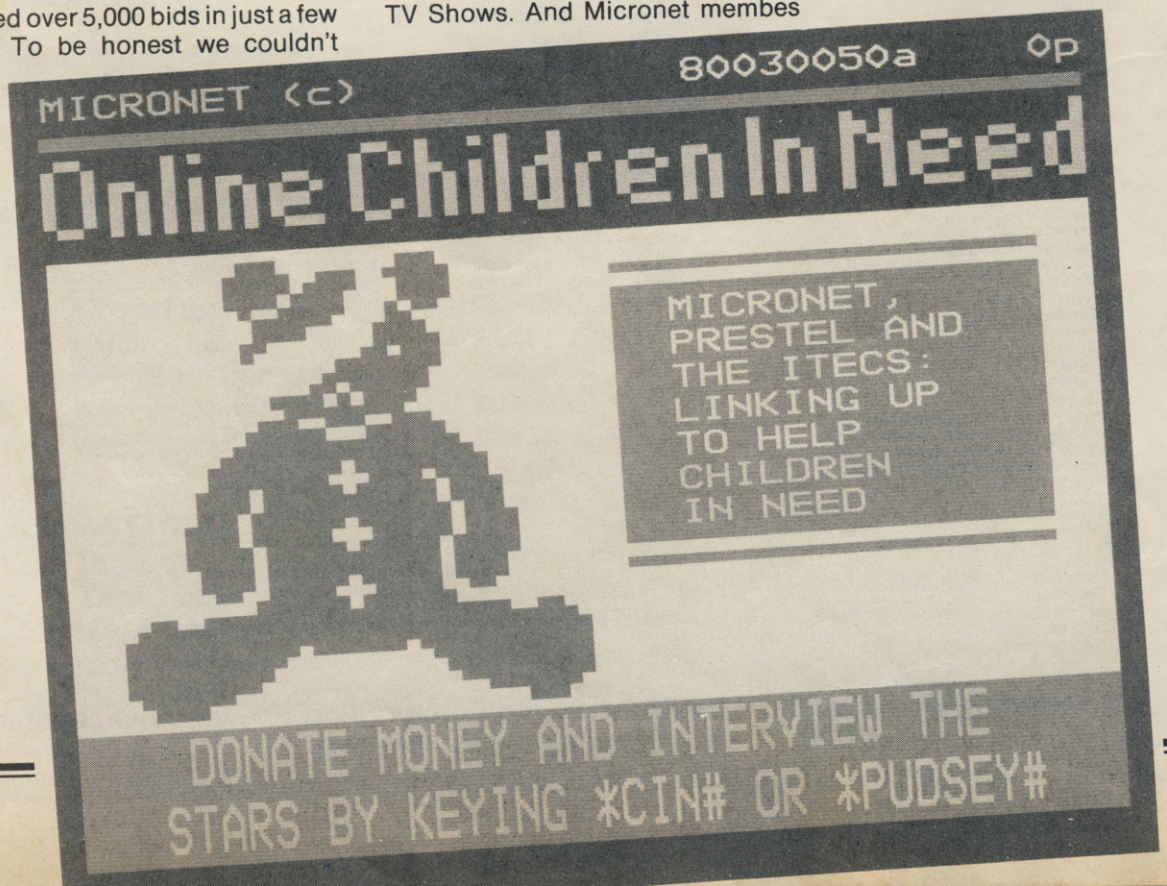
from various manufacturers made up the complete list, and the £5,000 worth of good fetched well over £6,000.

Of course, no charity occasion is complete without a celebrity or two, and there was no shortage on the night of Children In Need. Star attractions included Rowan Atkinson, Nigel Havers, Fiona Fullerton, Joanna Lumley, and many members of the casts of Eastenders, Coronation Street, Bread and other popular TV Shows. And Micronet membes were able to interview the celebrities via the network. Explains David Rosenbaum, "We had two terminals in a booth at the back of the studio. It was a bit cramped because we had to share the area with all the BBC local radio stations, but our biggest problem was coping with all the questions. The minute we announced that a guest like Eastender Nick Berry was on-line we'd get hundreds of them, even though he would only be able to stay with us for about fifteen minutes and perhaps answer ten questions!"

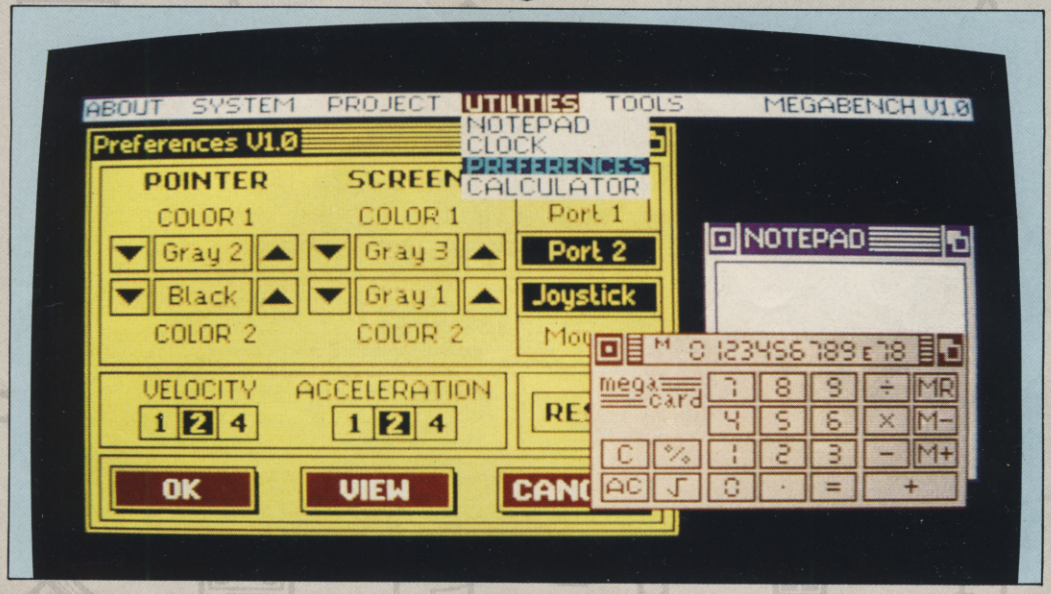
As On-Line Children In Need was all about making money it wasn't restricted to just Micronet members — anybody on Prestel could take part (Prestel's Travel Service helped out on the night by taking the pledges) and around the country anyone near one of the many Information Technology Centres (ITECs) could get involved.

"Not only did we raise a lot of money thanks to our members," comments Rosenbaum, "but they had a lot of fun doing it because they weren't just sitting back and watching — they were actually taking part."

For a free brochure on Micronet contact them on 01-278 3143, or write to Telemap Ltd, Durrant House, 8 Herbal Hill, London EC1R 5EJ.



KEEP IT SIMPLE!



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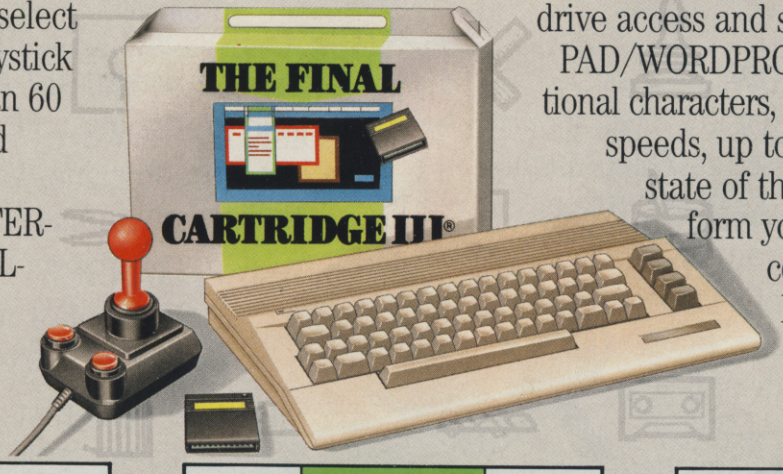

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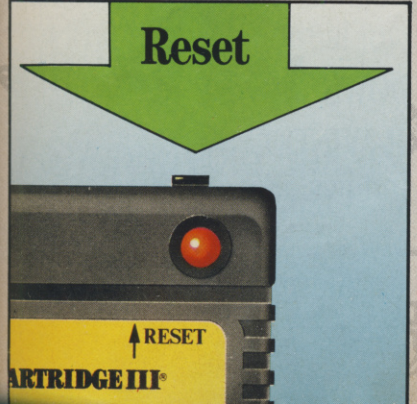
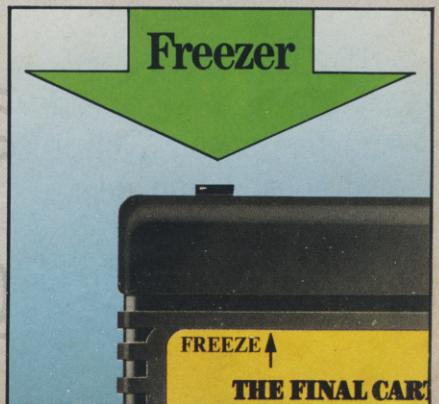
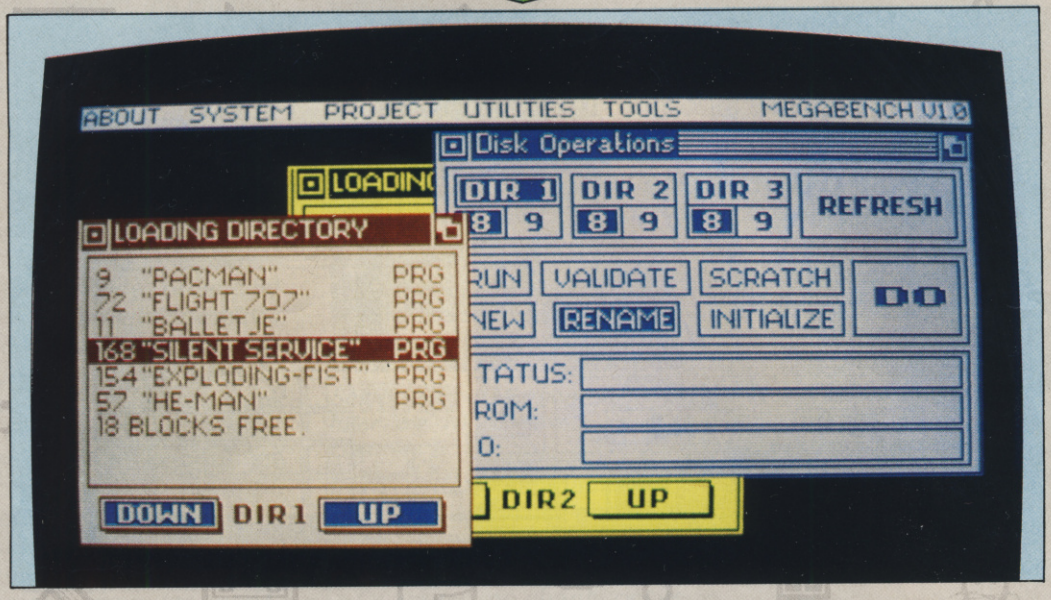




WINDOWS



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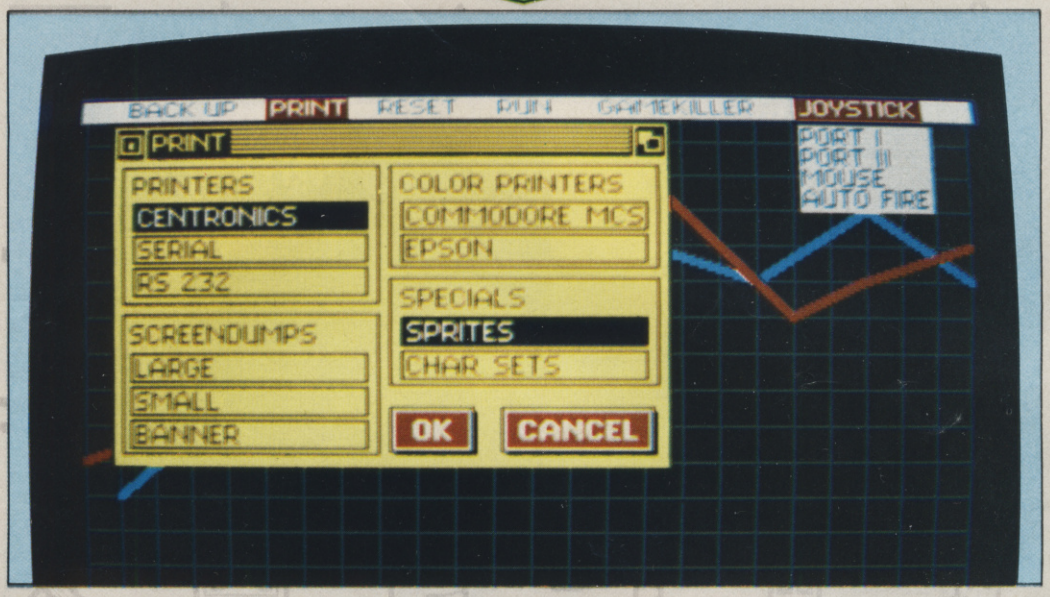

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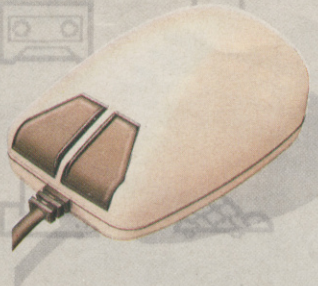

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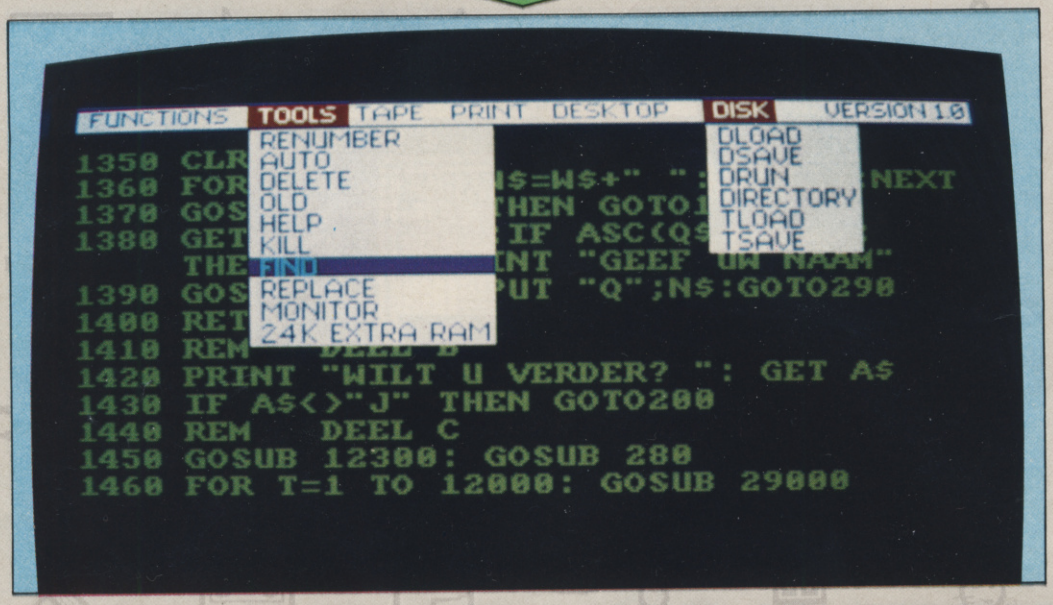

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OUT RUN

US Gold

When the hydraulic Outrun arcade machine appeared, it was the game to play and be seen playing, and it is still un-rivalled in my mind. As you know, the arcade version gained most attention because of its G-force-simulating hydraulics, and thankfully, the game matched this with superb atmosphere and playability. How would this be re-written to run on a computer with such by its nature inferior hardware? The memory difference for instance: the arcade out run has 8 megabytes compared to our 64K. So it is important not to confuse arcade illusion with home computer reality.

The fun starts at Coconut Beach. The TV crew and race officials aren't around on the 64, but crowds of spectators, which do a good impression of cardboard cut-outs line the opening stages. Slamming your Ferrari into top gear, you speed off down the avenue of palm trees. The most noticable difference between this and the coin-op is the comparatively empty look of the screen. I didn't expect the inclusion of the sea and the windsurfers, but the juggernaughts and dual carridge way wouldn't have gone amiss. But I keep reminding myself . . 64K . . only 64K . .

Some of the time, the road is devoid of scenery, so to keep up the effect of movement, the faint lines across the road have been emphasised, which works to a degree. Rival racers come in the shape of Beetles, trucks and Porsches. Hitting these won't drastically impare your chances, but they certainly slow you down. A small point that I found strange was that the image of the Ferrari which is seen when a car is hit on the coin-op has been included, but isn't used at the appropriate time during the game.

The only real difference in the gameplay is the exclusion of the junctions leading to different stages. Because of memory restrictions, a version following a route to each of the five finishing points has been recorded separately. If a section is completed within the time limit, the next follows straight on, so there's no loading during the game.

Speed isn't a problem; the cars and scenery slide quickly past, but at the price of less smooth movement. These are made up from character graphics as seen in Space Harrier, but don't block out the background noticably. As you can see from the screenshots, the graphics aren't as brilliant as could be hoped for; some of the road-side obstacles are very simple. The windmills for example, have no sails, and the beach shops have a rather infantile design. Despite this, some parts look very good; the palm trees and other cars are not at all bad.

Although many of the coin-op's features are missing, such as the high score table set against an evening sky, and general empty look, I was pleased to see some small but clever touches like the wagging finger of your girlfriend after crashing into a tree. Two of the three soundtracks have been included (Passing Breeze and Magical Sound Shower) which are OK versions of the excellent originals, as well as the very lively audio recording that comes with the game.

So does it live up to the hype? Well not quite. But then is anyone who has played the arcade not expecting too much? The game plays well. It has excitement and will keep you locked to your 64 for many hours. But it is let down in places by the varying graphics, somewhat jerky road and scenery movement, and bends that have a habit of changing direction very suddenly. Taking into consideration the limits of the 64, a fair job has been done, although I feel that there are areas that could have been improved. Fans of the original (who isn't?) will do well to take this Outrun for an extended spin.

T.H.

Graphics:	68%
Sound:	75%
Playability:	78%
Overall:	74%
Rating:	CRISP
Price:	£9.99 (cass)
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4th August 1987 10-00-00 T

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FELIX!

Cheque It Out

As you see we — or rather I have received a cheque from the Bank of England. Well, to tell the truth, it wasn't the Bank of England itself but a certain Nigel Lawson who claims to live at Number Eleven Downing Street and run the U.K.'s economy. That must be nonsense because we all know who controls cash balances of most of the world — Beejay (I got change for fifty pound note) Lewis, Finance Director of CCI. This Nigel Lawson pretended to be asking for free software to run on the Chancellor of the Exchequer's computer but it was really a coded message pleading with me to tell him how to save the world from a financial crash. Accidentally I misfiled it, forgot about it (I get these boring letters from politicians all the time) and so the stock markets of the world went into freefall and dropped through the cellar. I suppose it's a bit late now that billions have been wiped off the bank accounts of just about everybody to tell him what to do. I believe that it was him running that free software that caused all the trouble. Pity he didn't get it late like most other people...

St Felix the Martyr

I don't approve of Oskars. At least until someone gives me one. I deserve one of those sexy golden statuettes far more than some people. They only produce the stuff. I have to watch people (well, they look like human beings sometimes) like Toy (Benny) Organ, Bud Venials and Sack Skinner (I agree!) play the nasty things. *I* have to listen to their cackles of evil joy when the games crash or they can dig their bloodstained fingernails into a cassette and rip out the tape — a ritual which carried out whenever a game doesn't get an "Awesome" rating or better. *I* have to bear the strange habits of Our Sacred Editor and his friend Professor Kate Williams the famous old-age specialist as they cavort with their naked friends around bonfires in the car park. *I* have to grit my pearly teeth when (Acting) Lieutenant Colonel Bully Brown starts drilling all these Hitler-moustached Latin Americans who visit him and *I* have to dodge the bazooka shells that explode down the corridors of CCI Towers. *I* have to listen to all this Spanish swearing that goes on between André Jaygee and his historicl mama La Señora Doña Jacwellinea Vete a la Porra de Salvaje and it is *I* your adorable but neglected Super Sad Felix who has to answer the million telephone calls the night long for Max the Ad ("Mothballs" to his lady friends) from exotic places like Hull and Cheltenham. And why has Contessa Alessandra de Gallagher made sure my name keeps getting rubbed off the subscription list so that I have to pay to get a copy of CCI now? Just because she didn't get given Manchester as an Xmas present, she blames me! My whole world is tumbling about my pointed ears. They are giving Oskars to everyone in the universe except me! Someone up there doesn't like me and a premonition of doom is haunting my furry sleep . . .

Amnesia 1986

Lady Amanda du Barry has sent us a little note (Will it be her last from Aroilasoft for we have heard she is taking an Activision (geddit?) of her future?). It follows up Ariolasoft's brilliant record of recent successes. (Shall we both try hard to think of one?). It is a really up-to-date game called Paranoia 1984. 1984? Yes, chère, liebe Reader, 1984! Ja, I know und you know that now it's 1988 aleady but do all those gemütlich, up-to-der-minute Ariolasofties? Perhaps you'd better send them any old calendars you've still got from last year. At least then they'd only be three years out. Next month Ariolasoft's Christmas Party will be held in Disraeliburg, East Berlin on Thames, Pond Streethill, Hampstead. Only those wearing flared trousers, wearing platform soled shoes and riding BMX bikes will be admitted.

Court in the Reign

In my travels around this country, especially in the inner cities, I have been extremely troubled to see the way that so called programmers and computer game planners are destroying the landscape. They go on as if they had no sense of the heritage of this country at all. They pour out games as if there were no tomorrow. They pile up old cassette cases and leave stacks of unsold disks all over the place as if everybody had nothing to do but clear up after them. If they were not so rich, I and many others would call them vandals. They pretend that all this is necessary just to get a game in the Charts. I have had a meeting with a Mr Gallup recently and he confirms to me that you can simply buy up all your own games and get a number one without any fuss or mess at all. These anti-social games planners are really sowers of confusion and chaos, which as everyone knows grow extremely quickly in the computer industry. With just 1.6% of the market they think they can turn lovely old places like Hampstead into Bangkok style slums. It is no use bringing out games called Super Carbuncle or International Blot on the Landscape the Twelfth and expect me to reign over such a depraved state. There are, of course, games that are worthwhile. They are quite small and of a human dimension and if I see my wife some day, I'll give her one. As my royal mother said to me only last week "What is your game, Charles?" She had heard, quite falsely, that I was going to license the United Kingdom to Domark. "Bu , royal mummy," I said, "they are the leading proponents of the New Brutalism. When they finish with a game, it's nothing but a shell of the original idea. Look at Star Wars!" "Oh, so they are connected with President Regan. That's all right then. They won't do anything too well — that's not English public school style," she said approvingly. You can see what anyone interested in tradition is up against. Wherever you go — Birmingham, Walsall, New Oxford Street, Slough, it's everywhere the same. This country will end up a wasteland of old cassette inlays and used instructions blowing about deserted duplication plants. Millions of copies of unwanted magazines are clogging up the sewers of Ludlow . . . I do not want to reign over a divided nation — divided between the computer owners and the rest — or is it the disk drivers and the cassette cyclists? Whichever it is, we've all got to pull together and stop it before it is too late.

Things are going to get much worse before they get better. If you think 1987 was bad, wait until you see 1986. I have spoken to C16 people and I can tell you they are close to rioting and I know that Plus/4 gangs will soon roaming the streets baying for blood.

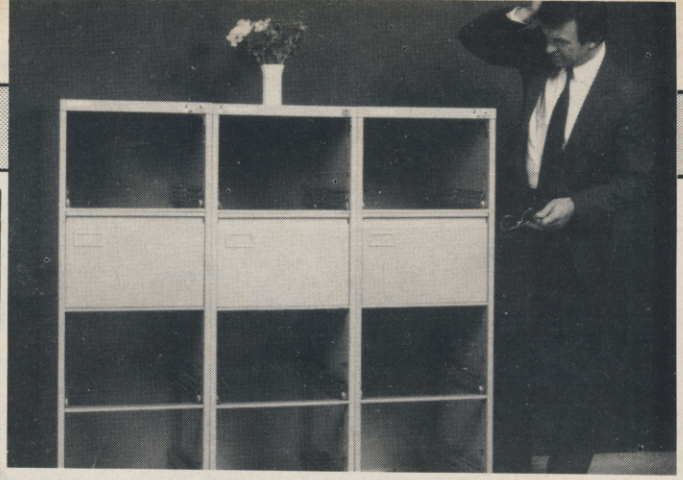
THE FEELINE

There is too much talk about Spectrums of the Left and 64s of the Right, unemployed STs and yuppie Amigas. We're all in the same Ocean-going liner and as Mrs Mary Thatcher said a few moments ago, we have just got time to sell it off before it's too late. So I want you to join me in telling the high rising game planners and elitist programmers that enough is enough and we have got to have what we want. Just as soon as we find out what that is. Thank you and good morning. "Build Your Own St. Paul's Cathedral Construction Set cartridge" by Nonsensical Software, costs £1.99 million for the Vic 20 or SX64 only and can be obtained from Palace Software, Paternoster St., King's Cross, London Transport Square, SW1.

Keep your distance, Amiga lover!

What is all this nonsense about a computer called Amiga 500. Who's going to buy something called 'Amiga' that as everyone knows means 'mistress' in Mexican and child molester — bankrobber — inefficient dustman and computer repairer in Serbo-Croat (or is it Konkany? You speak both fluently, of course). Anyway a computer should have a proper name like Vic or Eoric and a decent age like 64. No-one who knows anything about machines is going to want one that has an unpleasant appendage called a "blitter". Anyone who starts "blitting" around me is asking for a good scratching in a place where it really hurts. And what about this "Fat Agnes" chip business? Fat is a feminist issue (whatever that may mean!) and it's male chauvinist piggery to talk about it especially connected with female computers or plugs. And "booting up!" That's an invitation to hooliganism and kinkiness, if I've ever heard one. And now an Amiga virus! It doesn't surprise me. It's a punishment for all who take part in this sort of thing whether they are consenting adults or not (I'm told it's more fun it they don't consent.)

Yes, there is no doubt that anyone who has even touched an Amiga is now infected and no-one gets into CCI Towers these days without being tested by being plugged into a Robtek expansion device. I've noticed too that Major Ian Bennett-Machismo (they named IBM after him) Tech Ed of an underground adult magazine called Amiga User (they're all into drugs too, you know) puts a small transparent plastic sheath over the whole of his 3½"disk before inserting it into the Amiga. "You can never be too careful when interfacing." He tells me. "Look what happened to Dr Tom Watson. First the "constant companion" of Sherlock Holmes, then the founder of IBM, temporarily Head Druid and Chief Sentinel at Telecomsoft and now Marketing Supremo at Maxwellsoft. Where will it strike next?" I agree or at least I would if I could understand all his technical jargon.



Trouble In Store

The Northampton-based information storage experts, Cave Tab, recently launched their "Campaign for Effective Information Storage". The Campaign is intended to demonstrate to management across industry and commerce the high hidden costs associated with many currently accepted approaches to information storage.

"If you take a close look at your filing system," suggests Miles Reed, Cave Tab Managing Director, "you will find that three drawers in every four-drawer cabinet are effectively empty!"

You can see at the offices of famous C15½ games house Mastercodegoldbirdtech 9 out of 12 drawers are empty and the whole thing is there just to hold up a vase of flowers. As the Managing Director, Pickwick Thickie says "I take off my wig to them. I was in one of the drawers myself at the time giving some heavy dictation to my secretary Maude. We didn't hear a thing. It must have been an inside job!" For more information on how to store nothing anywhere anytime and send silly pictures to magazines contact Cave Tab (No artificial colouring or sweetners) on 060443677 and ask for Pickwick.

And speaking of Mirrorsoft (was I?) when are the said Dr Watson and PR Queen Patsy Bitton bringing out the new game "Defence of the Realm" that another computer mag has told us about? Or is it just another of these Amiga delusions that quickly pass from one "user" to another? Richard Branson has told me that "Defenders" are to be sold in cassettes at any good virgin chemists shop, price £9.95 for half an hour or they can be obtained under plain cover of course by any season ticket holder from G. Knee-Lowrents, Watford Football Club, Oxford, Derbyshire.

Who are these happy, happy boys? They are Richard and David Darling — known affectionately as the Peter Pan and Tinkerbelle of the computerworld. Why are they so happy? No, not because they can fly but because their sweetie Dad ('Captain Hook' Darling) gave them lots and lots of lovely pressies for Xmas. He filled their 15 denier stockings with simply oodles of lovely computer games ('As shown on TV') from such exciting labels as Mastertronic, Rack It, Americana, Alternative, Firebird Silver, Budgie, Alternative, Ricochet, Bulldog and Players. You can see how terrifically pleased they were to get all these marvellous games from such famous companies. Next year, Daddy has promised them a computer to go with the games. Yes, they're going to get a 003 . . . Sinclair ZX80 — that's if they're very good and don't crash their Porsches. Just wait for their beaming smiles then! (Bruce Everest and Lynne Funks are appearing in Not Tonight, Darling, I'm Double Glazing at the Bunbury Odeon. Tickets £1.99.)

MARY – WILL YOU PLEASE STOP WASHING KEITH IN THE BATH AND AIRING HIS DIRTY WASHING IN PUBLIC! HAPPY NEW YEAR TO SALLIE ALEX SCOTT & NATASHA MEOW!

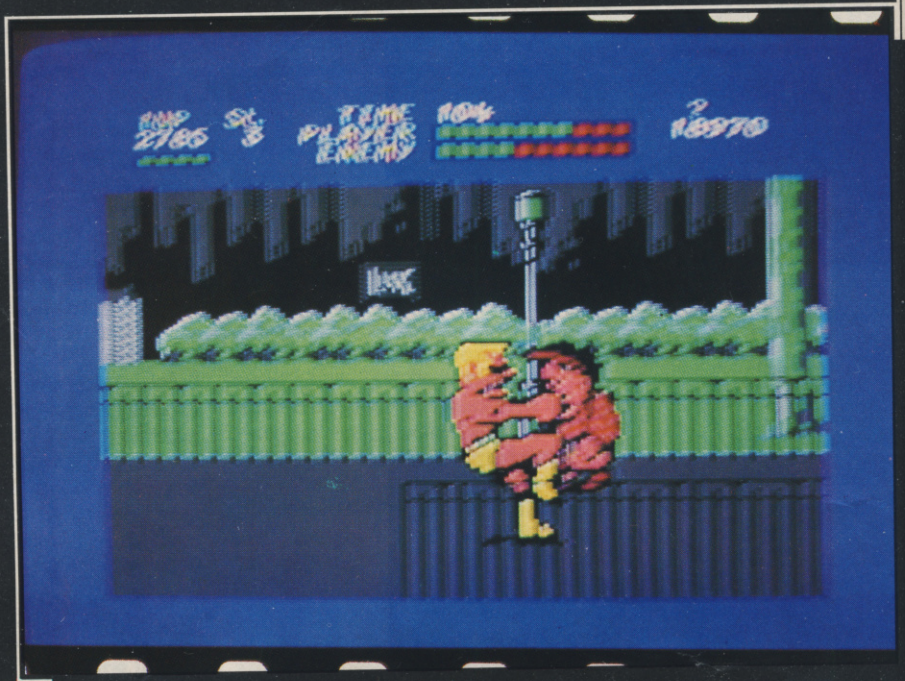
MEGAREVIEW

C64

CRISP

STREET HASSLE

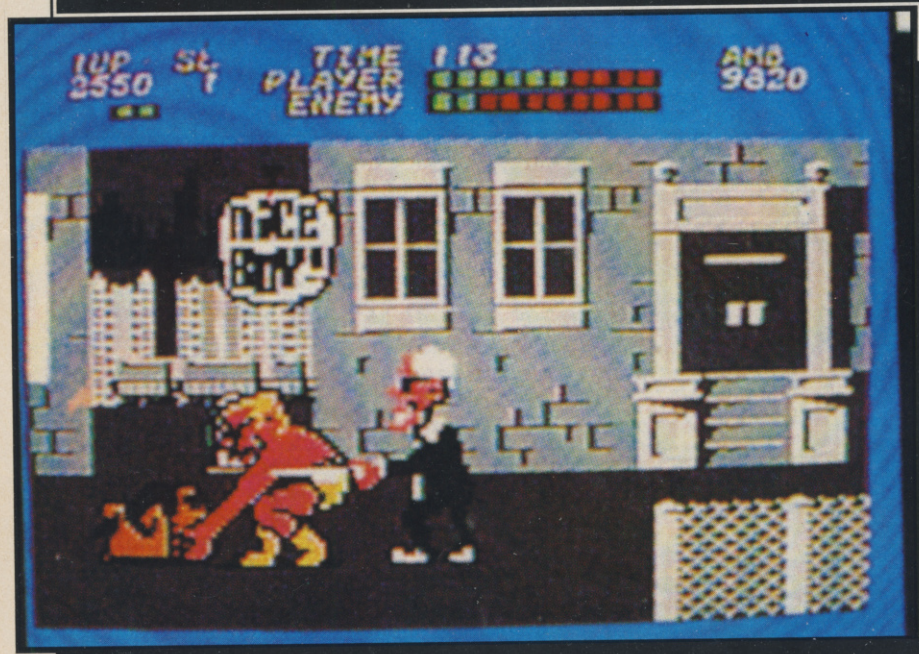
Melbourne House



It's mindless violence time again buster this time in Melbourne House's Street Hassle. The city streets have turned wild, times are hard when sumo wrestlers are afraid to venture out for fear of having their face re-arranged by a granny. Only one man is brave enough to clean up the streets. Charles Bronson has copped out, clad only in your shades, boots and yellow undies, you are that hero.

Each street is a few screens long, and is prowled across by such hooligan's as fearsome grannies, gorillas, breakdancers, dogs, and blind men. These all attack on sight with an appropriate weapon, or just their bodies. Look out for the granny's handbag, the blind man's stick, and the fat man's bulbous gut! When you see that, you know it's time to pile in! You have four attacking moves per level, which change when a street has been cleared up. Available moves include a variety of punches, butts and kicks, with some more off-beat assault methods like ear twisting to add a bit of humour.

The screen scrolls horizontally as you walk, and a level is cleared by beating up a certain number of people. One or two players can take part, and there's an option to start at the last level cleared.



The most noticable thing about Street Hassle is the graphics. The sprites are large and blocky, but very colourful and well drawn with a real movie-style cartoon look about them. Some of the positions the characters get into are enough to raise the odd snigger. The whole game has a very comical feel and look about it which is why it's very enjoyable, and a nice change from ninjas and karate.

Some of the effects are good, but on the whole, the sound breaks no new ground.

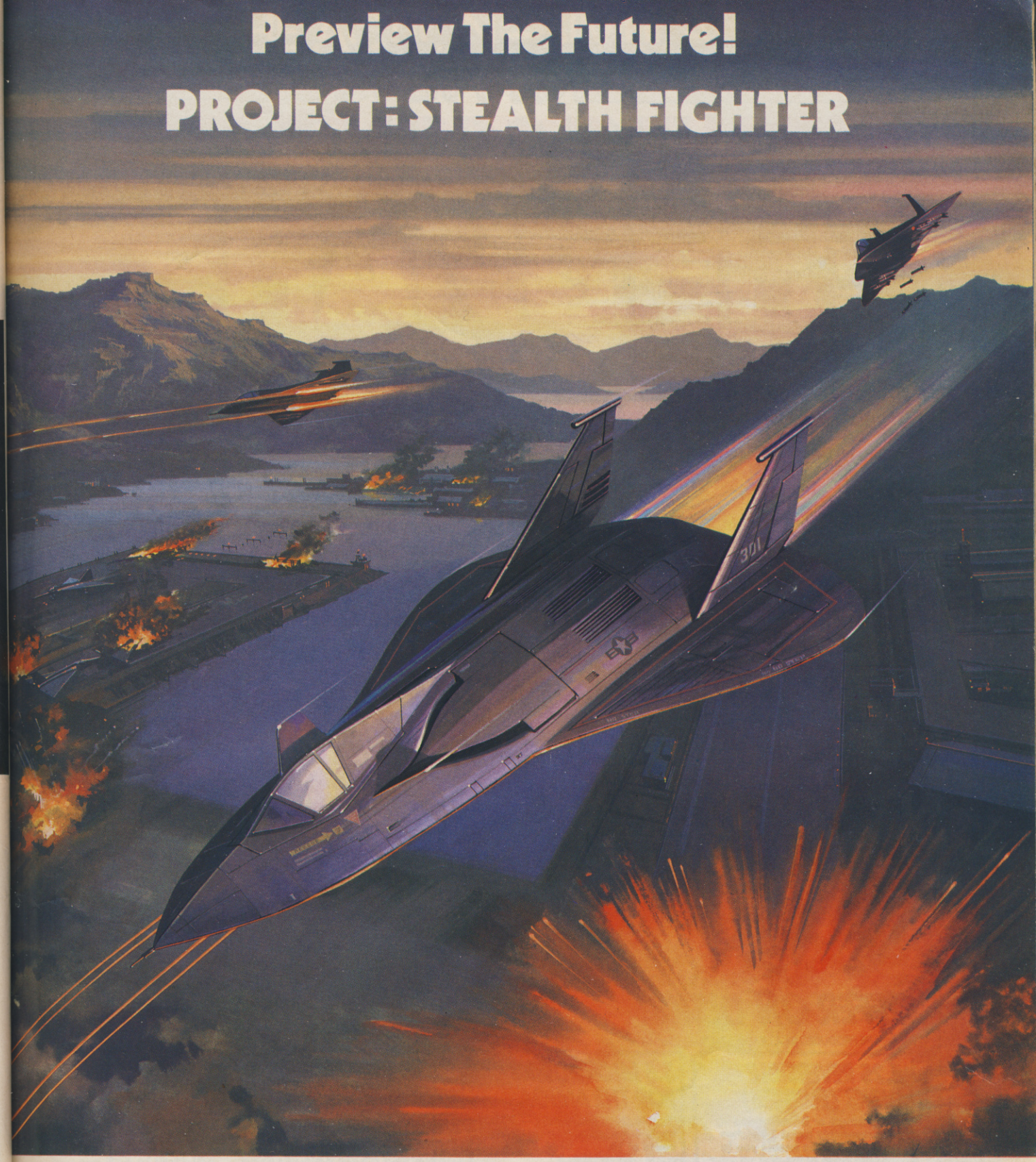
Street Hassle is not really special, but is certainly saved from a thumbs down by its quirky sense of humor and the exceptional strength of its well-programmed graphic approach. It certainly makes most of the fight games you've ever played look tiny by comparison. Check it out.

T.H.

Graphics: 71%
Sound: 68%
Playability: 72%
Overall: 70%
Rating: CRISP
Price: £8.95 (cass)
£14.95 (disk)

Preview The Future!

PROJECT: STEALTH FIGHTER



Stealth Fighter...the hottest topic of conversation in aviation circles today. Space Age technology and engineering make these aircraft virtually undetectable by enemy radar. Stealth Fighters are believed to be in operation, flying the most sensitive missions, flown by a superior class of pilot. You can experience that thrill of flying a revolutionary aircraft, previewing the edge of the future.

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REVIEW

GRAND PRIX SIMULATOR

Not wanting to miss out on the boom in car race games, Code Masters have released Grand Prix Simulator. The game isn't as you may think, a simulation with complex engine controls, but a look alike of the excellent coin-up Super Sprint.

Viewed from directly above, the game is for one or two players. The object is simply to beat the computer controlled car on each of the 12 tracks to progress to the next. The cars are controlled by steering left and right, and accelerating, but there are no brakes. You'd think from the way the cars skid, that they were driving on ice. This does add to the enjoyment of the game, but I think the effect has been a little over-done.

On the tracks you'll come across spanners and oil cans to be collected for points, and oil slicks which spin the car. To squeeze as much track into one screen, there are cross-overs and bridges. These work well in Super Sprint, but because the cars have no reverse control, crashing under a bridge can be annoying, as you take ages guessing which way to turn.

Some very coarse sampled speech announces the race positions, and the sound effects become annoying quickly. This is offset by the music in typical David Whittaker style.

To look at, GPS could be a lot better. The cars are a simple rectangle with a dot at one end. The backgrounds are colourful, but have a slightly messy look about them. Two racing cars occupy about a third of the screen, and look nice, but cut down the playing area.

GPS is a simple game and is good fun, but not without its faults, though at the price, these can be overlooked. If you have only a couple of pounds to spare, and have got the urge to drive GPS will be worth your while and your cash.

B.V.

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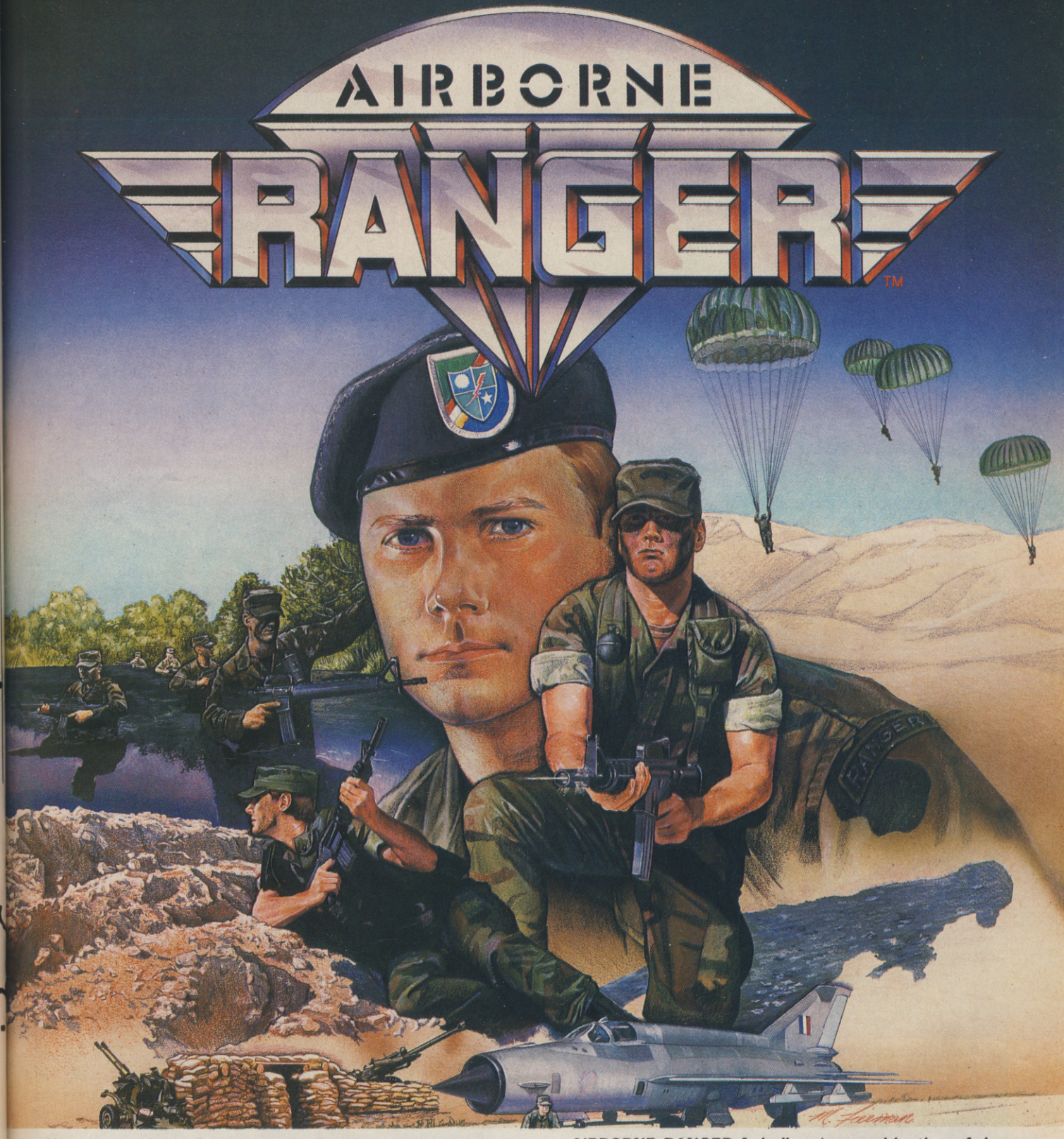
THE ACTION—SIMULATION

AIRBORNE RANGER™



You are one of the elite . . . parachuting alone behind enemy lines. The enemy controls the terrain, hidden in bunkers and machine gun nests . . . you may be surrounded. The action is fierce as you control one soldier's battle against overwhelming odds. You'll need skill and strategy to outmanoeuvre your enemy, plus courage and some luck to make your escape. Airborne Ranger is an exciting fast-paced simulation with 12 desperate missions in 3 different regions of the world. The possibilities are endless!

AIRBORNE RANGER. A challenging combination of danger and suspense. Available for the Commodore 64/128K. Cassette £14.95 Disk £19.95.

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AIRBORNE TO BE FREE

Microprose

The spunky little hero of Airborne Ranger comes packaged with everything except an identity, like a Cabbage Patch Kid in combat gear: you're left to name him yourself. I call mine Alvin; what's yours called? Better still you could even give him a nationality and allegiances of your own choosing. As you'd expect from Microprose, all the pointers are that he's an All-American Boy, who takes a break from teaching them geeks a lesson only to play a few bars of *The Star Spangled Banner* on his harmonica and write a letter home to mom.

But in these days of more glasnost than you'd find at a Club 18-30 beach party, and with Mikkie G. making friends in the West faster than Roy Rogers ever did, it could be more fun reassigning Alvin's obvious nationalism, now that the Yanks are no longer seen as the only good guys. After all, the American national conscience is already quickly repositioning itself — no more so than in pop culture. A couple of years back, the "Let's get them godamn' Ruskies" theme of US Gold's Raid Over Moscow, which offered the delightful prospect of straffing strollers in Red Square, worried not a few reviewers — but that didn't stop it being a chart success. Still, would it be so popular today? And more recently, the doors of a flinching Hollywood were being slammed on the guys trying to make Platoon and only British finance made that movie possible. Today, every major studio has a self-searching 'nam film to its name. *Full Metal Jacket* has even given us the hit single from the hit movie of the war that flopped.

Maybe it's best to take Airborne Ranger simply as it comes: a cleverly staged, fast-moving and disconcertingly addictive opportunity to manipulate a thinking man's Rambo through a dozen different missions with little more to show than an Elastoplast on your fire-button finger even if you make a pig's ear out of it. For openers you're given a choice between novice and veteran status; it will be some time before you opt for the latter — though when you do, it allows you to create a kind of cryogenic commando you can 'freeze' on disk or tape and thaw out for the next challenge.

Those challenges come in three flavours: tricky, difficult and you probably ain't never goin' to see your sweetheart again, bud. You can choose from sabotage, rescue and intelligence operations, which have to be tackled in temperate, arctic or desert conditions. Eager to press on, it was irksome to find that with the disk version tested, for protection, entry to gameplay was allowed only after correctly identifying one of a number of campaign ribbons displayed on-screen by checking through through the fat manual that comes with the game. Get that wrong and you're rated too tired to continue. In practice, you're locked out of the game and compelled to start from scratch with a new Load.

Having chosen your mission, you're soon in an aircraft flying over your target terrain, strategically releasing supply pods as you go. It's only when you reach the southern perimeter that a jump light tells you it's time to live up to your name. Reassuringly (and unlike in real life), your parachute opens every time, and it only remains for you to aim for a safe landing with a few deft dabs on your joystick making sure you drift clear of minefields and similarly unsympathetic chunks of not so terra firma.

Shrug off your parachute and keep moving. By now you're given some substance in the form of a big, mean and meaningful-looking sprite who can run, crouch and crawl — not to mention spin around in a complete circle (nice animation this) whilst firing continuously at the enemy, who have footsteps like Thumper and so don't often take you by surprise.

But you'll have more than individual combatants to worry about. Whether you're yomping across burning sand, sinking into blinding snow or tripping through a more verdant landscape, there's no shortage of machine gun posts, trenches, barbed wire, mines and other nasties to make you wish you'd listened to dad and gone to Wall Street instead of West Point.

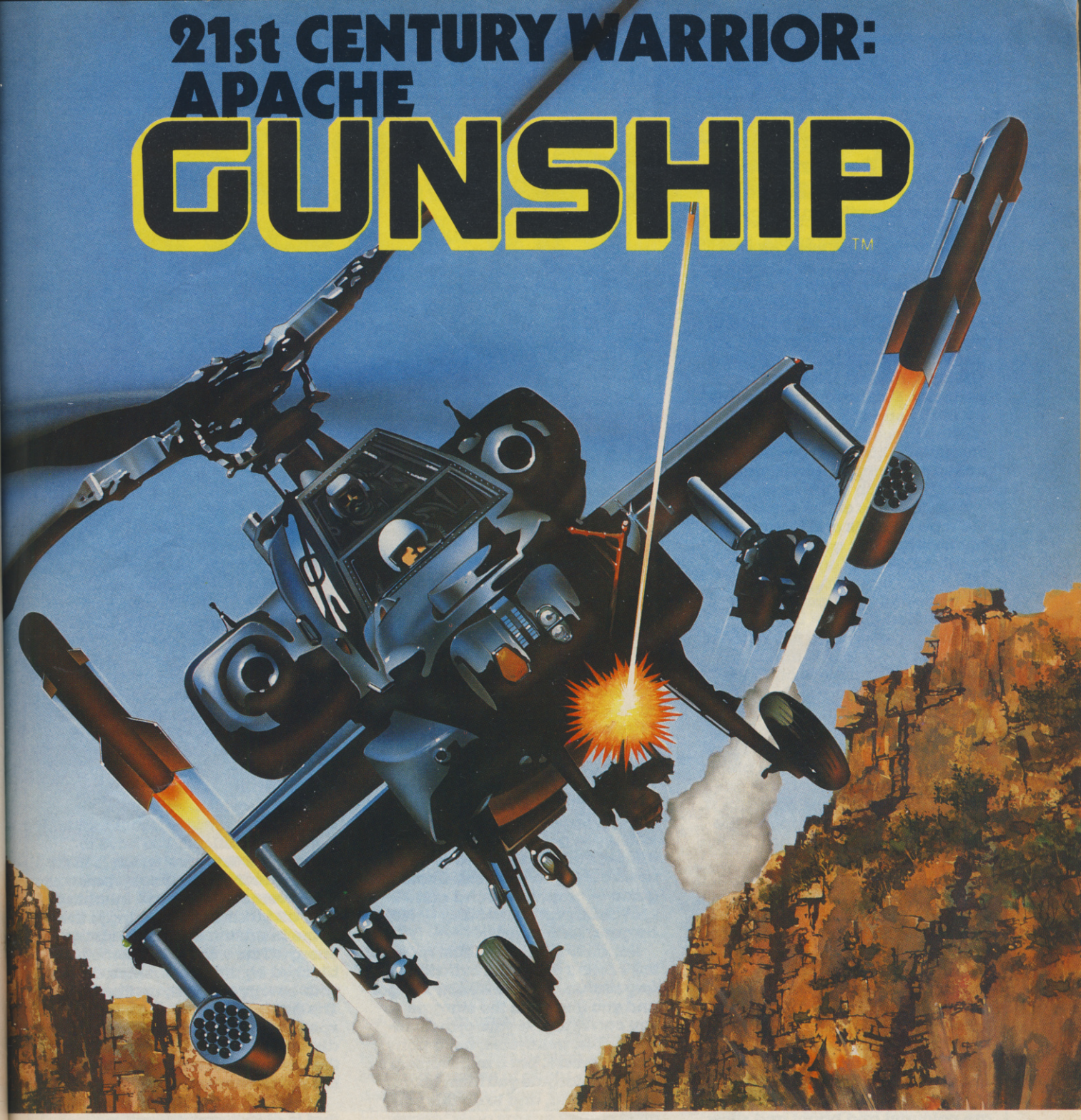
The successful completion of some missions often owes to craftiness than to a crackling carbine, which is what makes Airborne Ranger rather more worthy than many combat titles. The manual gives useful hints and guidance for each mission, but there's still plenty left for the player to do in thinking out his tactics, choosing the right weapons, and using them correctly. In some cases though, you can throw all subtlety to the wind and simply blast your way to glory with such gratuitous violence that you'll make Chuck Norris look like a conservationist. Just make sure you leave a way out — because if you miss the pickup plane, you might end up being the next subject of a PoW escape mission. And just when you think you've mastered them all, you can switch to campaign mode in which you have to complete all 12 missions in a particular sequence.

Airborne Ranger is one of those crossover titles that offers something of more substance to gamesters bored with the predictability of a straight shoot-em-up, and which could well appeal to the traditionalist wargamer/strategist who wouldn't normally be seen dead in polite company with anything so vulgar as a joystick.

J.R.

AIRBORNE RANGER
Microprose
C64/128 — £14.95; £19.95 disk

21st CENTURY WARRIOR: APACHE GUNSHIP™



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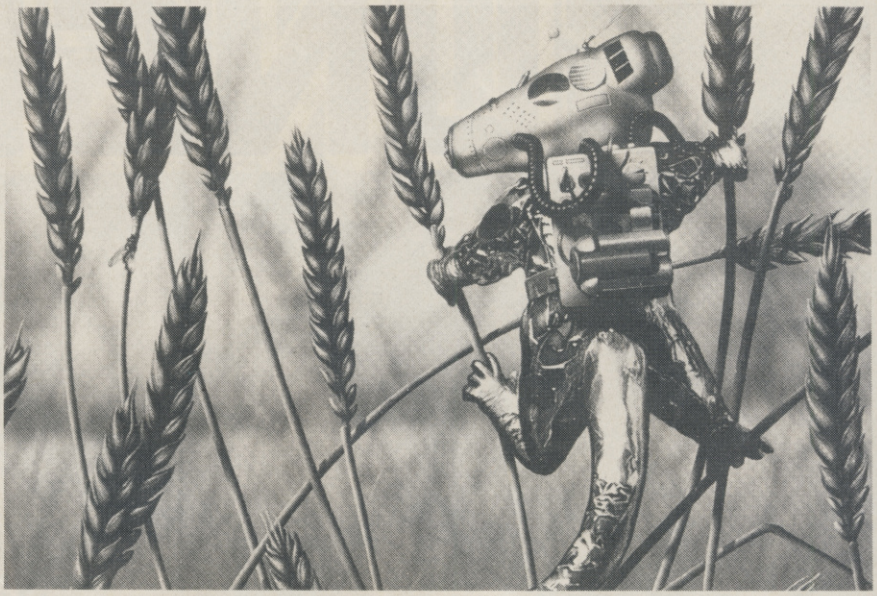
(C16) Power Plays — Power House



Power House have decided to release a compilation of 8 budget 64 games.

The compilation kicks off with Gods and Heroes, a collect 'em up platform game. It has 50 screens, and on each one you complete a challenge, this entails, collecting a weapon, like a sword, or club. The graphics, though basic, are pretty effective, and set the scene perfectly. But the music is terrible — it's really one of the most ear-grating pieces I've heard on a computer! This game has plenty of action for platform freaks, and is a worthy addition to the tape.

Terminator is on the same side of the tape as Gods and Heroes, and as shoot 'em ups go, it is very predictable. Uridium has been taken, slowed down, put in a Nemesis-like background, and been pulled down on the playability scale by a few notches. You must shoot all the aliens on each planet and move on to the next planet, where you do the whole thing all over again. After 17 planets worth, you start again, but with tougher aliens — great. I love this type of game — you get plenty of depth and action and this one could have had plenty going for it, but the background graphics are poor, so are the sprites. As it is, this game is dullsville.

Gun Runner, on the other hand, is an excellent Choplifter clone. I'm a great fan of Choplifter, and for a budget game, this is an excellent copy, that returns the addiction of the original, but has enough individual ideas, to make it a good game in its own right. The theme is to rescue as many men as possible, by flying low on the ground and hoisting them up when they are above you. The background graphics aren't all that special, but are colourful and bright and show off the game very well indeed. The sprites are much better, and some are very impressive. Music is good and the parralax scrolling — all six levels of it — are incredible. Gavin Raeburn is an excellent coder, and he has written some not too hot games (ie Terminator), but when he gets down to work, he can produce some really good stuff. When a company gives him time to produce a full price game, it's going to be something special.

Hercules, is by the same author as Gods of Heroes, and you'd be had put, to tell the difference between the two — both have the same ear-grating sound effects and music, and gameplay is very similar. The one big difference is that Gods and Heroes was playable, where Hercules is not. You have to negotiate a series of rooms, to complete your tasks, but each screen is riddled with traps that you have no way of knowing about. Platforms disappear, others kill you, some don't disappear and don't seem to kill you, until the last second, and then the worst thing of all is the fact that every time you get killed you get transported to a different room, and have to devise a new strategy to progress. I hate this game — graphics, sound and playability are all lacking — It may be good for a laugh!

Xenon Ranger is the first game on the second tape, and is instantly forgettable. You are Xenon Ranger and you must find the stargate so you can return to your own multi-verse. Yes, multiverse, not a puny little universe, but a multiverse. To find the stargate you must go underground, and to do this you must collect energy pods, above ground. So there you have it, a defender game on the top half of the game, and a platform one on the lower half. I didn't get any fun from this game at all — everything about it stinks of unplayability. Don't even think about playing this.

Aftermath is Xevious in disguise. That's all there is to it. Take Xevious, change the graphics a bit — take the US Gold label off, and what do you get, yes that's right — Aftermath. The object of the game is to destroy the enemy base. You reach the base after flying through ten attack waves, dished out to you by the aliens, which have taken over Earth. The attack waves come thick and fast and as you don't know what's coming next, it's very easy to get killed. Sound is minimal and in places the graphics are very poor, but as shoot 'em ups go this one isn't too bad, and it has some good points — such as the difficulty option, or the demo game where you can practice without getting killed.

Sqij! is a supa fast, and highly difficult shoot 'em up cum exploration game, which is mind bendingly difficult. You have to rebuild the 'Enertree' which is in six pieces, each piece is somewhere in the caverns — which are inhabited with all kinds of wierd thingys that home in on him and drain his energy. Your way is also sometimes blocked by thin walls which drain your energy as badly as the aliens. The game is played at a very fast speed and I saw my first few go's disappear very quickly. Once I got the hang of it, it was still difficult but not as frustrating.

Space Warrior is another game that is at first very difficult to master. It is played out on seven platforms. You have a little spaceship in which you fly around in, bumping into other space ships as you go. If you're above them when you bump them you win — if you're not you die. This relatively simple game is very good and is surprisingly addictive for what it is.

As a whole this compilation of games is good. It has a wide mix of games, some bad, some okay, and a couple excellent, and so is very good value.

C.K.

Value Rating 8/10

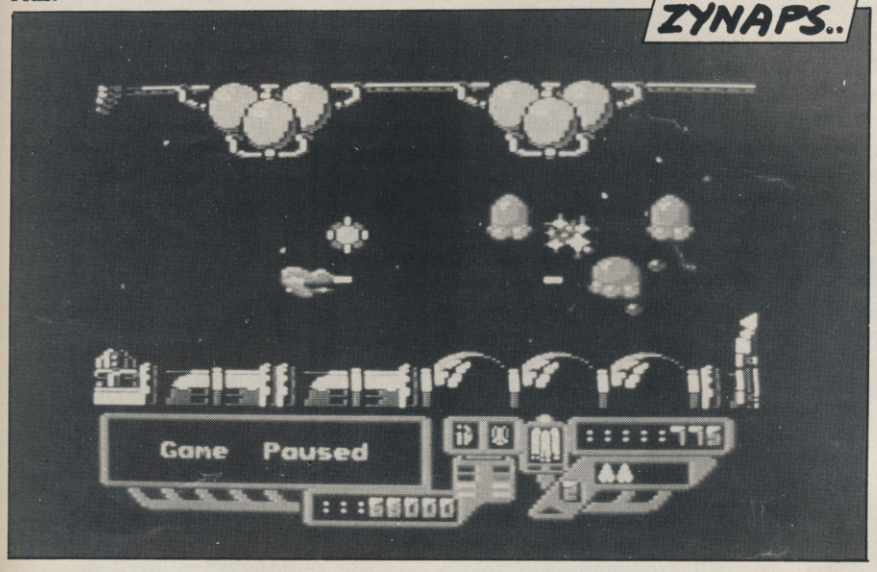
REVIEW

FOUR SMASH HITS

HEWSON

There have been so many compilations recently, new 64 owners must be finding it very hard to decide which to buy. I saw new 64 owners, because compilations are in excellent way of building up a collection of quality games without shelling out excessive amounts. Hewson's latest contribution consists of Zynaps, Ranarama, Exolon and Uridium Plus.

ZYNAPS..



Zynaps, whilst not the most original of games, is a highly professional Nemesis-style space blaster. The game starts with you escaping an alien space station, flying off into space. The screen scrolls smoothly from right to left, with restricting structures at the top and bottom of the screen. Pulsating aliens wobble towards your ship in the much-used but effective way, one after the other. Your ship starts with only elementary firepower, but dead aliens leave behind fuel pods. Collecting these with your fuel-scoop activates more powerful weapons.

The graphic design of Zynaps is very good. Colour is used well, and all the scrolling and animation is very smooth. Sound effects are another of its good points. Zynaps is an excellent game, to look at, to listen to, and to play.

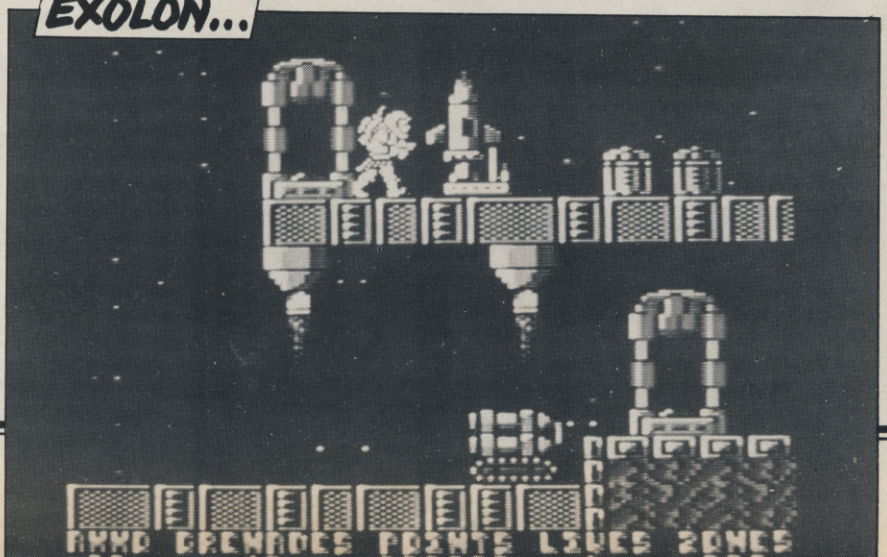
Ranarama looks loosely based on Gauntlet. You play a sorceror's apprentice who has foolishly turned himself into a frog when casting a spell to improve his looks. To gain the power to turn yourself back into a human, you must destroy the warlocks on each level. The dungeon is viewed from above, and only when a room has been visited, will it show up on-screen. Around the dungeons there are nasty energy snapping baddies. Dwarf warriors, fire gollums, bisects, guardians and death serpents all need to be shot. On the floor at various points in the game, you'll find glyphs which can display a map, kill nasties and other handy things.

Fans of magic, runes, scorcerey and the like will find this an enjoyable game, with acceptable graphics and sound. Not amazing, but worthy of attention.

A shoot 'em up of a slightly different sort is **Exolon**. The object is to blast your way through over a hundred screens of aliens and defence systems. Your detailed character starts at the far left of the planet. Many obstacles lie in your way, but these can be blown-up with grenades. Aliens swarm from space and pods, and guess what? Yes, you shoot them or they kill you. As you progress, the screens don't scroll, but flip. They gameplay isn't highly varied, but the teleports, ledges, cannons and other problems are enough to make it a satisfying game.

The backgrounds are very colourful, and the main sprite is well animated. The few sound effects are good. It's long term interest may not be great, but for a quick game now and then, it's good fun.

EXOLON...



Finally, there's **Uridium Plus.** Andrew Braybrook's game spawned a thousand clones, it also spawned this up-grade of the original version. The game is played over a number of horizontal scrolling 'dreadnoughts'. On the base of these dreadnoughts are stationary ships and implacements to be shot. These don't fire back, but the attacking aliens do. Aliens aren't the only things to worry about. Tall pillars can't be flown over and must be dodged. Between levels there's a fruit machine type bonus section, with a second chance to shoot anything you missed, when the dreadnought collapses.

This is an action packed shoot 'em up, which like Ranarama, didn't appeal quite as much to me as it did to others, but its graphics, sound and gameplay are without doubt some of the best around.

Compilations are good news for software houses. It gives their old titles a new lease of life, whilst keeping the buyers happy. A lot of good value compilations have come out recently, and I'm glad to say that this is one of the better ones.

Price: £9.95 (c) £14.95 (d) **T.H.**

COMBAT

Ocean

Here comes Ocean's biggest biggie for quite a while, the 64 version of Combat School. In fact, except for CCI's Oskar game of the year, this must be the best ever Ocean production — platoon still to come of course. Now's your chance to graduate from Combat School, and be sent on a top secret mission in the comfort of your favourite armchair (or the discomfort of a rickety stool depending on your set-up!).

There are seven events played against the clock. Each event must be completed within a time limit to qualify for the next. Any extra time is added to the next event's clock.

"Running across to the right, the assault course scrolls along quickly."

The first event is a race over an assault course. The arcade version is controlled by spinning a trak-ball as fast as possible to build up speed. This is replaced on the 64 by the joystick waggle technique. The screen is split horizontally to show independent views for the two players.

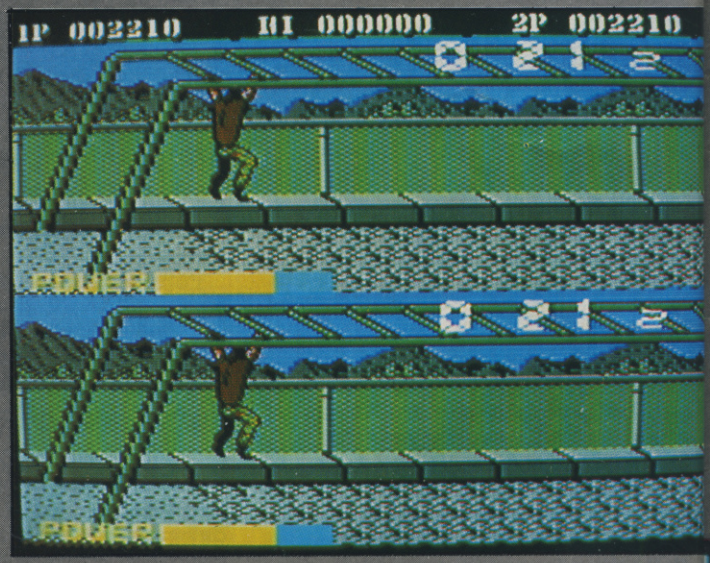
Running across to the right, the assault course scrolls along quickly. Walls at varying heights must be jumped or climbed over by pressing the fire button. Later in the course you must cross a horizontal ladder by swinging monkey-style.

Complete that in the time limit, and you'll qualify for the next event: the firing range. Rows of targets pop up from the ground as both players attempt to shoot as many as possible before they disappear from where they came.

Two sights can cause a lot of confusion, but it adds to the fun. Powerful music and sound effects enhance what is otherwise a fairly simple event.

"By now you'll need a rest from the frantic waggling of those events..."

Next there's the iron man race. Viewed from above, this is a cross-country race against the clock. The land is strewn with holes, boulders and undergrowth. You'll soon encounter a river which must be swum, with a canoe in the middle which comes in handy. But there are rocks that can wreck that, too. If you make it to the opposite bank, it's a sprint to the finish line.



By now you'll need a rest from the frantic waggling of those events, and the second firing range is well positioned. This time, the players shoot as many of the robot tanks as possible. These come down the sceen in formation and can be easy to shoot if you're positioned correctly.

Not wanting to let your biceps get too lazy, there's another waggler next in the shape of arm wrestling. In contrast to the noticably un-blocky sprites in most of the game, this section has some lego-style toughies sitting either side of a table. Waggle faster than your opponent to win. When played with two humans, unless one is much better than the other, both players will be in store for half a minute's waggling in deadlock.

SCHOOL

If by any chance you do manage to defeat the instrutor, you'll be sent on a secret mission to rescue some hostages. This is a Kung Fu Master type game in which you kick attacking enemies and jump their knives.

The graphics vary from very good in some parts, through to average in others. On the whole, the sprites are excellently drawn, well detailed, and sharply animated. The scrolling is also well up to scratch, and the backgrounds are good.

Martin Galway's title screen music is an excellent version of one of those US army whistley tunes (you know the type). Driving music and sound effects also add a lot to the game.

"...but it's not easy because half the targets have pictures of your instructor on them!"

Combat School loads in two parts; the first six events followed by the instructor fight and the final mission. Multi-loads on cassette are generally a pain, but to squeeze it all into one load would have meant a big reduction in quality. The game is really a Hyper Sports variant, but an extremely well disguised one.

Another firing range next. Here, your sight locks on to the targets, but it's not easy because half the targets have pictures of your instructor on them. Shoot one of these, and you'll have to wait for the next set of targets before you can shoot again.

The final part of your training is a fight with your instructor. Eight moves are available to beat up that real old meanie. The sprites on this section are rather small, and the game doesn't play as well as the others.

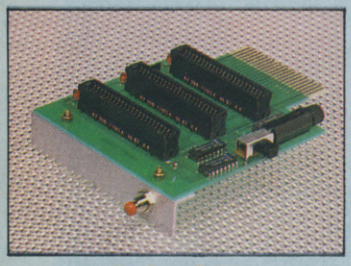
"...a terrific buy for arcade addicts in particular."

Combat School comes with a playable first level demo of Gryzor, another of Oceans coin-op conversions. This together with the seven events and the final mission, make the package a terrific buy for arcade addicts in particular. If your joystick can handle it, check out this Ocean game for some muscle-building fun. Absolutely top class. Combat School has got to be one of the classic 64 games, a real winner that everybody will enjoy.

B.V

Graphics: 82%
Sound: 93%
Playability: 90%
Overall: 90%
Rating: AWESOME
Price: £8.95 (cass)
£12.95 (disk)

DATEL ELECTRONICS



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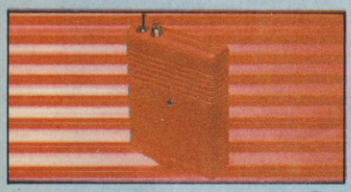

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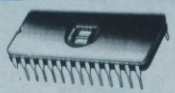

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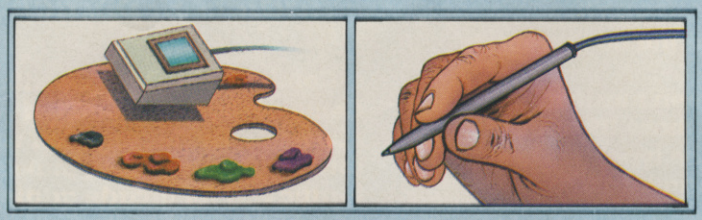

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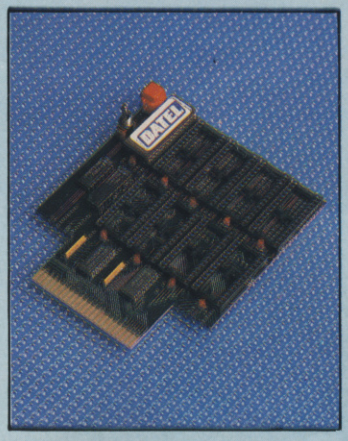

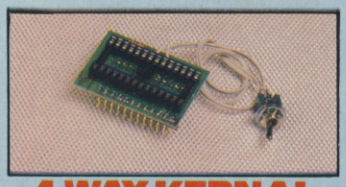

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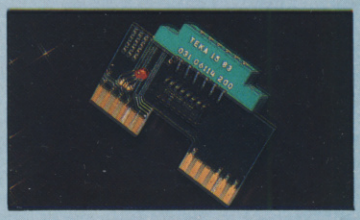

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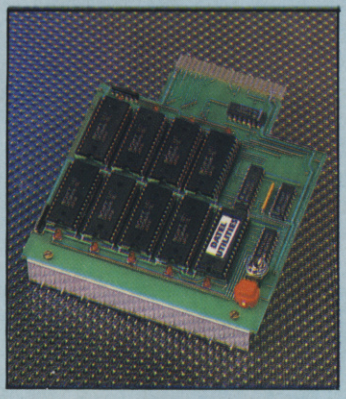

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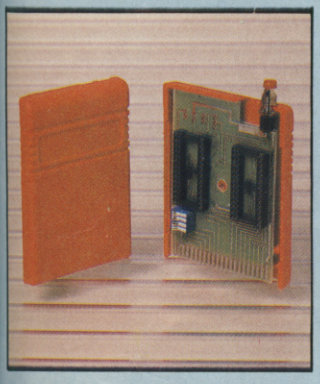

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- On board unstoppable reset.
- Full instructions.

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- Quickly and easily double your disk capacity.
- Use both sides of your disks.
- Simple to use.
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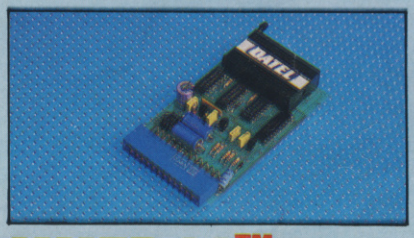

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- We believe Eprommer 64 is the most comprehensive, most friendly and best value for money programmer available for the 64/128.
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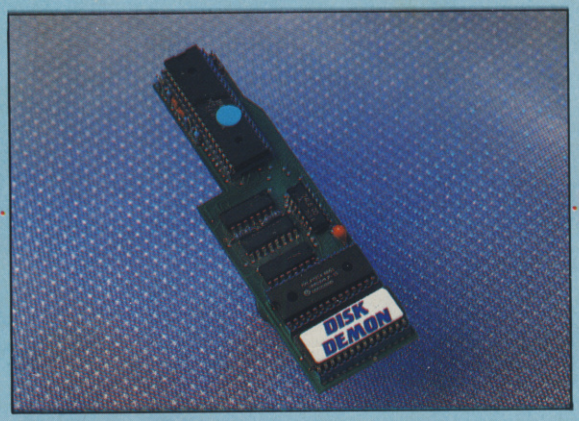

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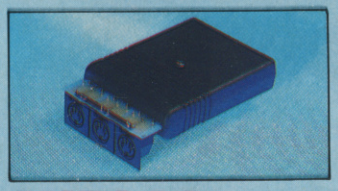

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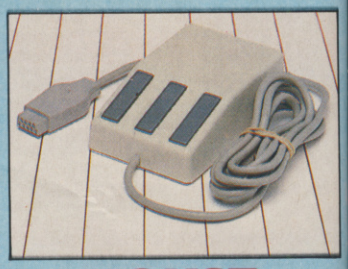

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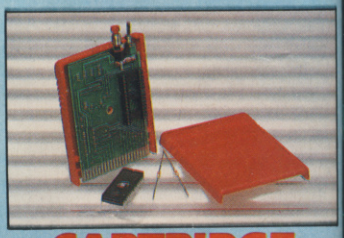

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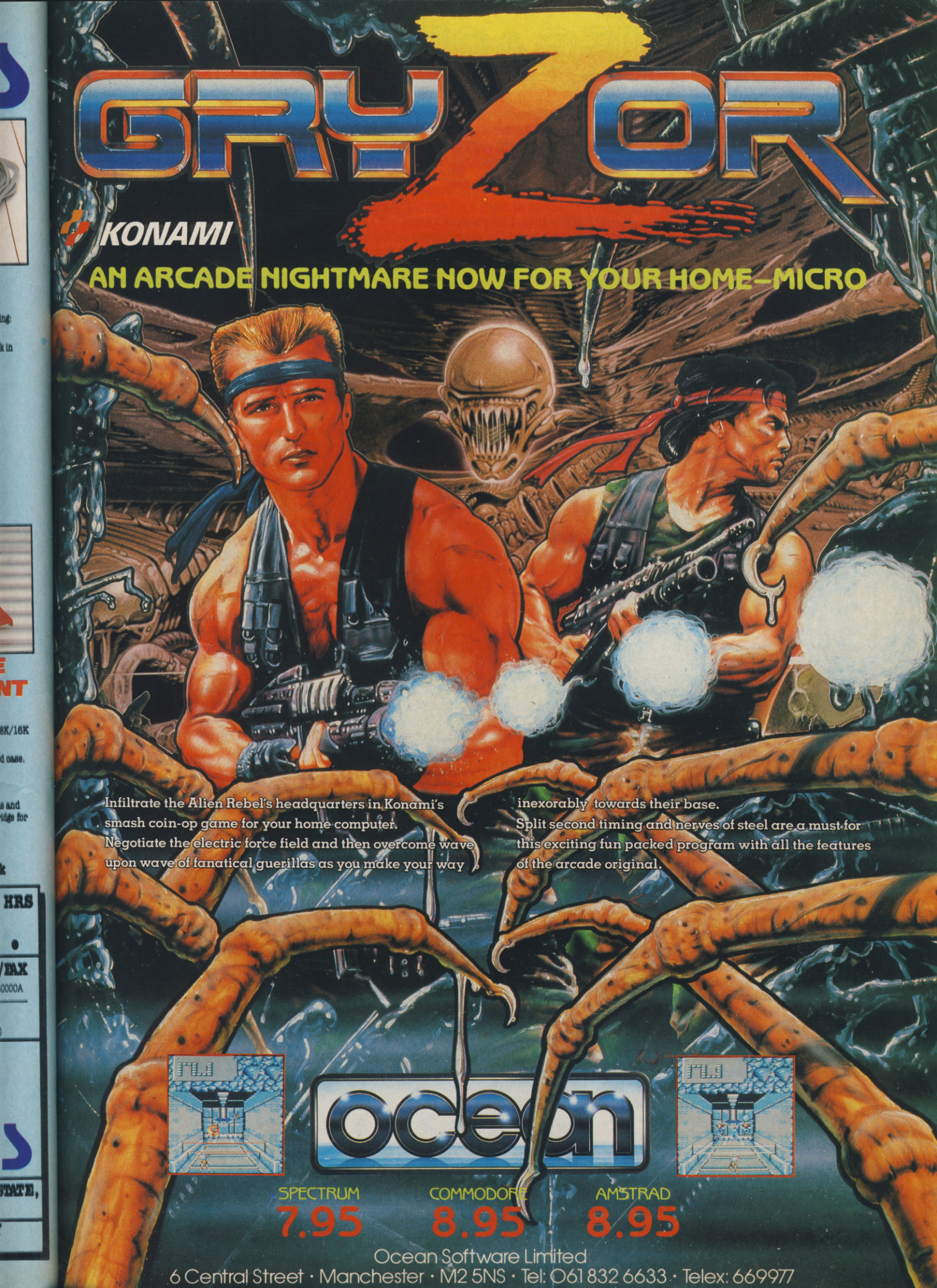
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C64

MEGA

MATCHDAY II

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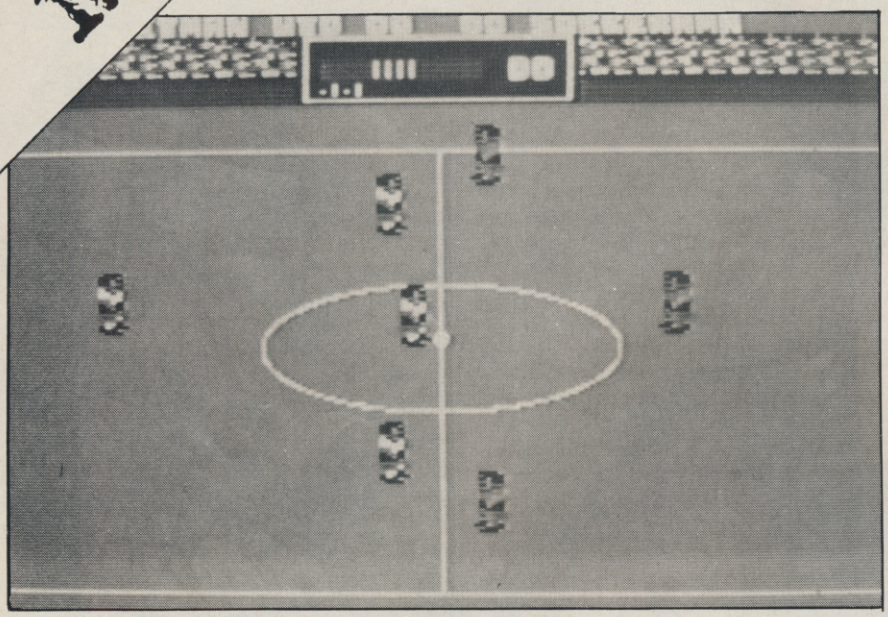


It's about time someone made a decent football game for the 64. Until now, there'd been nothing to rival Commodore's ancient but playable International Soccer. The original Matchday on the 64 was a load of plop, Imagine's Super Soccer wasn't much better, and the less said about World Cup Carnival the better. Matchday II is what all these games should have been.

From the menus, many different options can be selected. One or two people can play, either against each other on opposing teams, or together on the same team. Length of game, team colours, control of goalies and skill levels are some more of the major options. In addition to this, the games can be part of a league or cup competition.

The game is played in a similar way to International Soccer, with the pitch scrolling horizontally with the action. One player is controlled at any one time, and he'll be the player nearest the ball, or where the ball will land. the player under your control will be distinguishable by a minature 'kickometer'. This kickometer is a small bar which grows and shrinks to indicate how the force the kick will take. This can be set to a permanent strength, or can include back-heels. The players can run, tackle, shoulder charge, dribble, kick the ball, head the ball, and jump. During the game you can control all the usual throw-ins, corners, and goal kicks.

After a bit of practice, some good moves can be put together by crossing, heading and volleying the ball. On the whole, the game is realistic. The ball deflects off other players as it would in real life which adds a lot to the game.

About the only bad thing in Matchday II is its lack of speed. To begin with this seems a major problem, but after a while you tend to get used to it. I was pleased to see that the game doesn't have any real gameplay flaws.

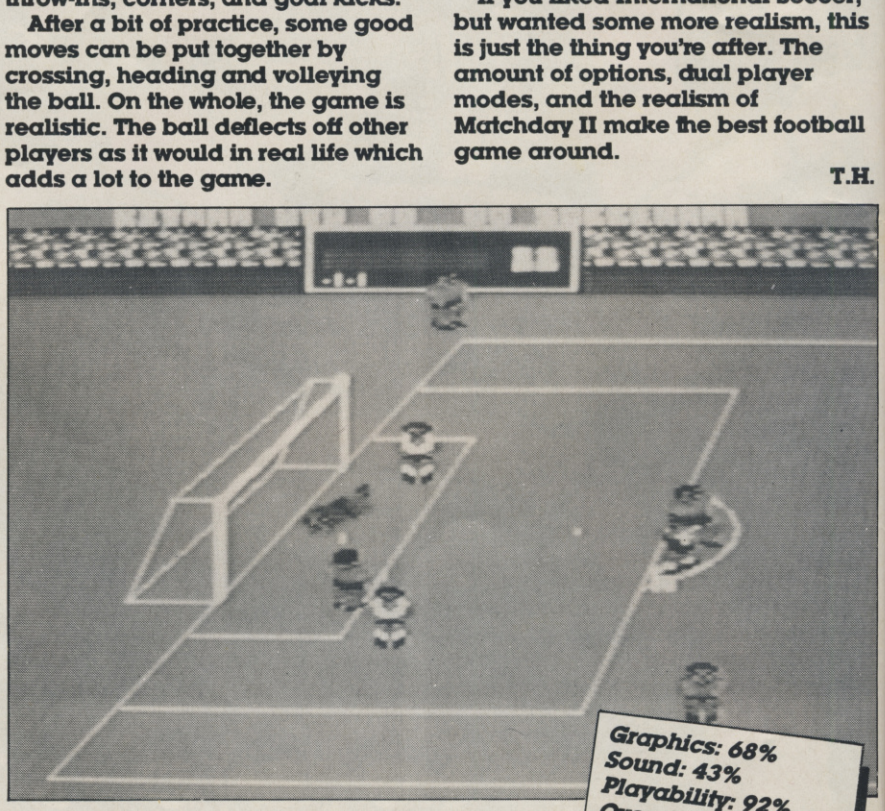
It is also agreeable to see the sprites in their non-expanded state, and this of course means they're small. Small they may be, but they're well drawn and a bit tubby. The background scrolling lets the game down a little through its lack of speed and smoothness.

In-game sound effects are basic, and the music is suitable, but not that special.

Matchday II's two player mode makes the game even more fun to play (although when both are on the same team it gets confusing because they both look the same) and the three skill levels will prolong the game's interest for one player.

If you liked International Soccer, but wanted some more realism, this is just the thing you're after. The amount of options, dual player modes, and the realism of Matchday II make the best football game around.

T.H.



Graphics: 68%
Sound: 43%
Playability: 92%
Overall: 89%
Rating: MEGA
Price: £8.95 (cass)
£12.95 (disk)

C64

IFFY

Star Wars

Domark

Remember Star Wars the arcade game? You know, the one tucked away in the corner that you never play any more. Well, I haven't seen anyone play it for ages, and it's hardly surprising. When it first appeared about four or five years ago, I was impressed by its vector graphics and realism. This ran on a vector graphics system, but as you might expect, in its translation to the home computer format, it's lost a lot of its speed.

The game takes you through three scenes from the film. The first is a straight forward 3D zap everything game. The view in all stages is from the cockpit, with everything moving in pseudo 3D vector graphics. The fighters fly at you shooting fireballs. Get hit by a fireball, and one of your nine shields will be lost.

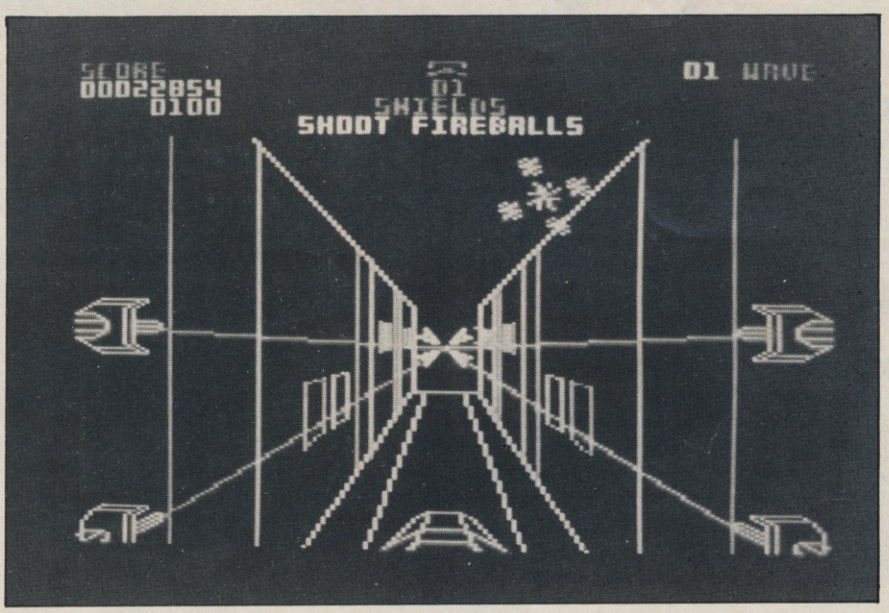
Games like this have been around for ages, most managing some sort of realistic 3D starfield. This is where Star Wars fails; the starfield just jerks about in a way that makes it difficult to see which way it's meant to be going. The Deathstar also has a life of its own and fails to move realistically.

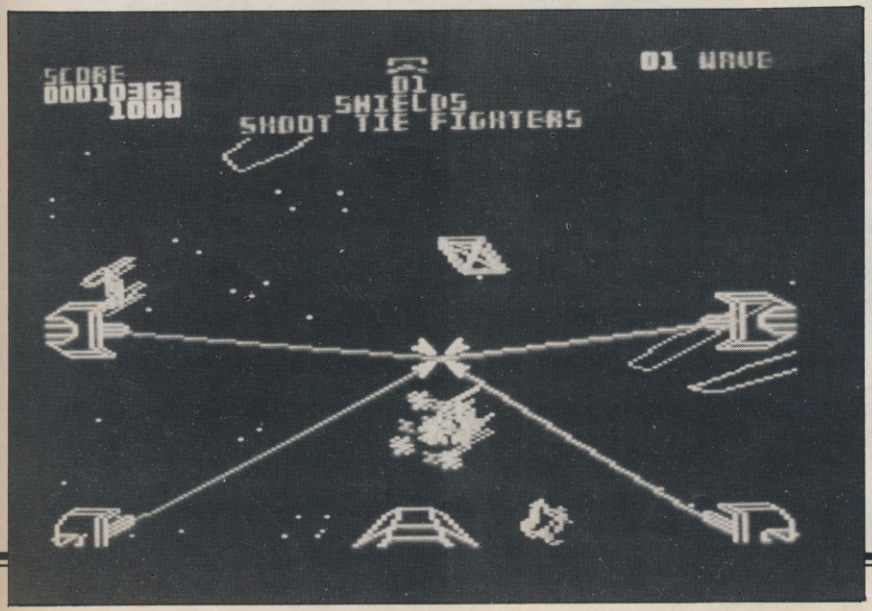
Survive long enough and you'll get a crack at stage two. This is in much the same format as Rainbird's Starglider, and involves flying over the surface of the Deathstar, dodging and shooting towers. The towers appear suddenly and can be hard to dodge, especially when fighting off fireballs. This stage has a touch more realism than the first, and the banking of the ship works well, but it too suffers from lack of speed and smoothness.

Stage three is set in the perimeter trench of the Deathstar. The Deathstar's weak spot is its exhaust port. If you can reach the end of the trench and shoot and port, the Deathstar will be destroyed. This is the hardest section, and it also uses the vector graphics to best effect.

On the sides of the trench are gun emplacements which once again attack you with fireballs. Later levels introduce barriers spanning the trench from side to side and top to bottom, calling for some nifty slalom flying. Shooting the port results in a somewhat disappointing explosion So ends the Deathstar not with a bang but with a whimper . . .

Some speech which is understandable (just) declares "The force will be with you" before the game starts. Apart from this, the title screen and high score table are rather drab, with a poor attempt at a parallax starfield.





A mediocre Star Wars theme tune is heard on the title screen, and a few FX of respectable quality sound during the game.

If anyone is still playing the arcade version, and is interested in buying it for their 64, I have to say that there could be some disappointment due. The conversion has been carried out fairly well, but is spoilt by its slow vectors. Besides, you've probably played enough like this already.
T.H.

Graphics: 55%
Sound: 50%
Playability: 52%
Overall: 50%
Rating: IFFY
Price: £9.95 (cass)
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REVIEW

Amiga

TEST DRIVE

Electronic Arts

Can there be anyone who's never dreamed about slipping themselves into the driving seat of one of the meanest sports cars imaginable, and letting rip without a care for any other road users? The arcade game Out Run made that dream come true for many, but with the price of the machine running into many thousands of pounds, and no Amiga conversion planned, your dream might never come true. That is, unless you take this latest game from Electronic Arts for a test drive.

You've just made your first million from your software company, and decide to see what's on offer down at the local showroom. Exciting the salesman with wads of money, you are offered a test drive in any of the five sports cars.

To start with, you're presented with a superb side view of a Porsche 911 Turbo. Below is a panel displaying information on the car such as approxdmate price, acceleration, top speed etc. Moving the joystick scrolls the other choices onto the screen, with their respective specifications. The choice is between the Porsche 911 Turbo, a Ferrari Testarossa, a Lotus Turbo Esprit, a Lamborghini Countach, and a Chevy Corvette. Each car is brilliantly drawn, and gives you a great urge to get in and get going. When the car has been selected, the window or the whole door opens to show the cool driver who gives you a quick flash of his pearly teeth before driving off.

The route you've chosen for the test drive is along a dangerous road on the side of a mountain, as seen in the film The Italian Job. The controls of your car have been simplified to an arcade-style level. As well as steering, you control the accelerator, brakes, and gears. Starting in neutral, the engine must be reved and put into gear. As the car isn't yours, you might as well burn some rubber. Give it some welly and stick it in gear, then hear those tyres screech. Gears can be controlled in one of two ways, either the conventional up/down, or mimicking the gearstick movement.

Taking a look over the detailed dash-board, you see the steep mountain on the right of the road, and a sheer drop on the left. Test Drive is from America, so it helps to drive on the right most of the time. The graphics are understandably not as good in this part when compared to the stills of the

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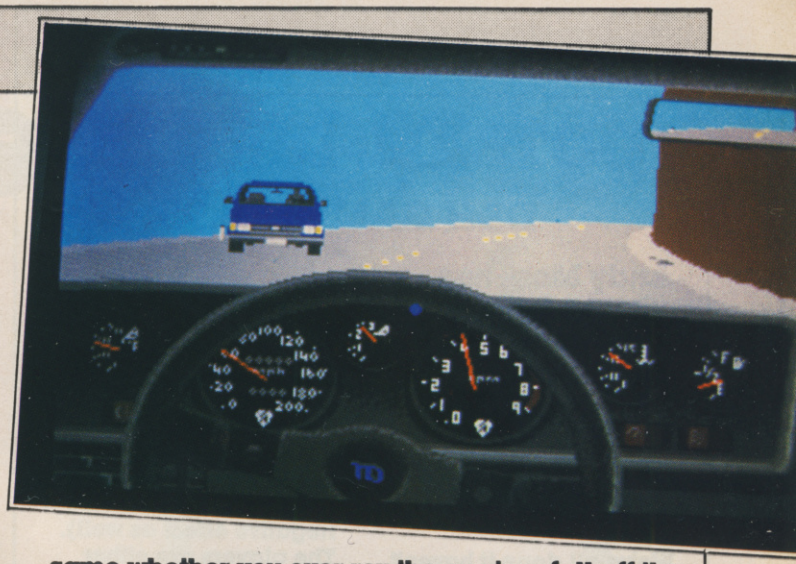

cars. On-coming cars appear with realistic speed, but jump large steps at a time, slightly spoiling the 3D effect. The road bends, dips and rises, but this too is rather jerky sometimes. A lot of graphics are being moved here, but I think it could be smoother if Accolade (the programmers) try hard enough, though the overall effect is very good.

To go with the cars, there are vans, trucks, potholes and water slicks to make life harder. Perhaps the biggest hazard comes in the form of the highway patrol police. They set up radar traps and use them to clock your speed. As the speed limit is usually about 55 mph, and the cars all do at least 150 mph, you're in for a bit of hassle. An advanced warning comes in the shape of the LEDs in your car. Soon after the LEDs flash, you'll see a police car in your rear-view mirror. Bottle-jobs will stop and get a ticket, but smoothies can out run the police.

There are five stages on the way back to the showroom. Between each is a gas station, where you get a progress report and some more great graphics. Each level gets harder to drive; bends get tighter and the road becomes more crowded. If you reach the end without writing off the car, you get to keep it. (Lucky you!)

I thought it a little strange that in some parts, there's a lot of detail, such as the car selection, and the odd bird plop on the windscreen, but not so in others, like the crash sequence which is the same whether you over-rev the engine, fall off the edge of the cliff, or crash into the mountain-side.

Some more variations in the game would not have gone amiss; the scenery stays the same throughout the game. Despite this, the game is excellent to play. Well above average engine sounds and skids combine with realistic graphic effects of the car skidding to give a real feeling of speed. Played in a swivel-chair, the game becomes even more fun as you sub-consiously turn with the car!

Test Drive could be better, but as it is, it's a great game that I recommend to all frustrated C5 drivers.

Price: £24.95 **T.H.**

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Andy Moss has always fancied himself as 'The Boss' of a soccer club. He steps into the hotseat in the latest football management game.

We've all done it haven't we? Standing on the terraces at Arsenal or Liverpool or wherever and criticising the manager something rotten. Either the team selection is wrong, or the centre forward needs glasses, or they paid too much for so and so. Given the chance we could all do a lot better ourselves, you hear people talk, it's so easy really, just organising training every day for a morning and then watch the match once a week. Nothing to it. OK, hotshots, load up your 64 with FOOTBALL DIRECTOR and see how you get on!

Ever since the famous Addictive 'Football Manager' there have been numerous tries at producing the "ultimate" football management simulation.

With Football Director I believe we have finally found a worthy successor. There are no graphics, no silly stick men wandering around aimlessly, no sound effects, and no artificial player intelligence. What you do get however, are over 56 different features that really bring home to you the trials and tribulations of life in the lower divisions

At the start, you have four divisions with 20 games in each, and a 38 game season. After picking a team to manage, you begin season one in Division Four with a squad of 12 players and £500,000 in the bank. Each player is given a skill rating ranging from 1 to 9 and if you are lucky you will start off with a few 4's and 5's. + or - indicates the boys' morale and this, along with their skills can be increased with extra training between matches (although this can have a negative effect as well). The players are either goalies, defenders, midfield or attackers, and stay that way throughout the game. You also get to employ staff like a coach or a youth team (which benefits you later by blooding new players into your squad free) a scout and a physiotherapist. Depending on performance, these employees can either be retained or sacked and replaced, it's up to you, all it costs is money. To employ staff can cost up to £2,000 a week, but it is worth it. As a Director of the club, you can also buy shares which, of course, fluctuate each week depending on the success or failure of the team; the same goes for gate receipts and sponsorship money. If results go against you, and some expensive transfers don't help, you soon find finances becoming stretched.

There are injuries, insurance, sendings off, European tours, FA and League Cups, UEFA and Cup Winners Cup, testimonials, in fact it is so realistic I leapt out of my seat in anger at one stage, and thought, hang on a minute if this is what football management is really like, I will stick to journalism, it's better for the blood pressure.

Make no mistake, until maybe FM II is released (and we haven't seen that yet) Football Director is THE best and most realistic Football Management game on the market.

A.M.

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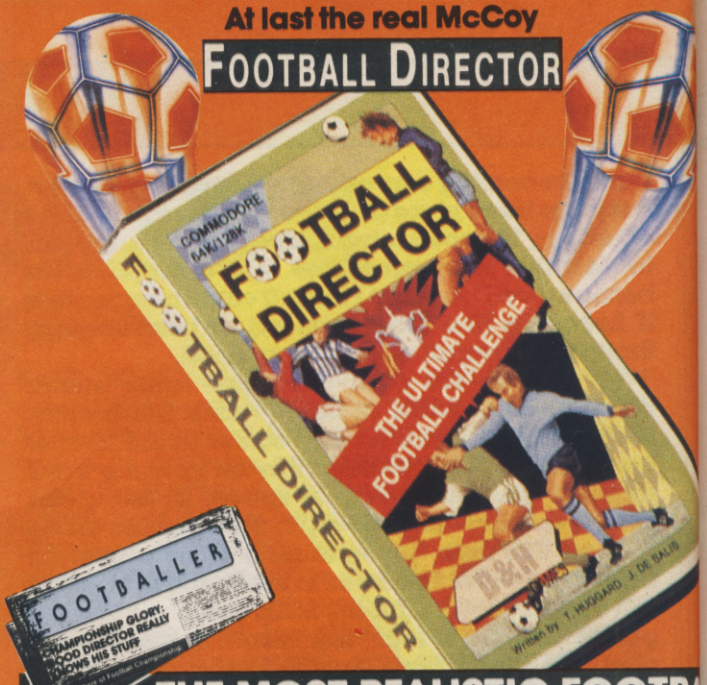
FOOTBALL DIRECTOR



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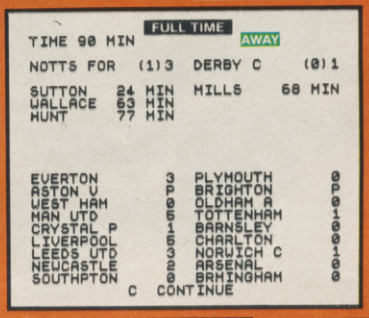

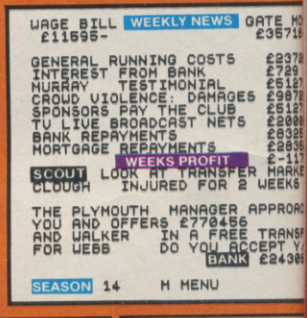

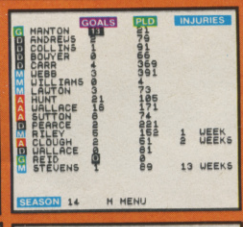

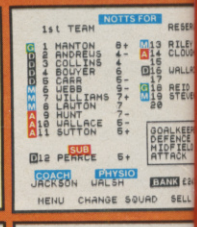

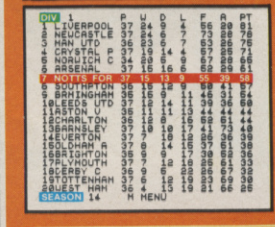

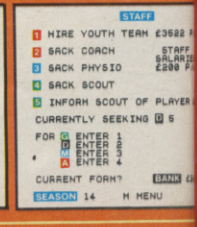

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The five runners up will get Ben Elton LP's and copies of the game and the next 25 will get copies of the Alternative Games.

Come on, really use your imagination and get some alternative thoughts moving! (who knows you might even get your alternative prize or alternatively you might not!)

Answers on a postcard please to Alternative Games Competition, CCI, 40 Bowling Green Lane, London EC1R 0NE to reach us by February 15th 1988

Cinemaware who created 'Defender' has built a reputation for innovation. It has plans to continue this success. Andy Moss caught up with Bob Jacobs in London recently and found out why.

Bob Jacobs is a very animated person. Short, tubby and hairy he may be, but boy can he sell you an idea.

Bob founded Cinemaware in 1986, after becoming disenchanted with the current software scene as it was in the States. "There just wasn't anything that was new and original," he declared, "and I had this concept that as movies are the inspiration for so many stories and are still consistently pulling in audiences that hell, if we could reproduce a movie on a computer we would have a very viable product". Cinemaware was born. He decided to concentrate on the older age group as "I am 38 years old and a sucker for a true adventure story, so our first releases were aimed at the same audience as me". Defender Of The Crown has become a classic in the true sense of the word. True the gameplay on the original Amiga version was a little thin but they learned from it and in the subsequent 64 version the game has been tightened up all round with a few extra features thrown in. "All our development is carried out on an Amiga, so obviously that version is always the first out. However, if we can see how the game can be improved, we will carry out maintainence accordingly". He goes on to talk about SDI after I complained that the game was a disappointment. "Yup I agree, that game was the only project written by an outsider who had the contract to write the whole shebang, graphics, music the lot. He made the mistake of making it too difficult in the early stages for the player to get into. In the other versions, which incidently we do ourselves — always, we have changed it for the better."

He doesn't believe in sequels . . . "You can't just drag out a successful idea. There will not be a Defender 2 for instance that baby is a one off." Instead he plumps for new highly original storylines that really complement the machine. "There will be a lot of shaking heads next year," he modestly suggests. "Microprose has been successful but Electronic Arts have not proved anything yet, we aim to produce software that is so state of the art that the others will all packe up and go back to the States." He goes on to confidently say that Cinemaware has, "The best 64 programmer in the world." Strong stuff indeed, and a boast that will take some achieving, but with the excellent King of Chicago (a gangster/mob game) and if The Three Stooges (a spoof game very closely imitating the three funny guys) turns out to be as good as the demo I saw, then I firmly believe that Bob Jacobs can do anything he says, after all, he's bigger than me . . .

A.M.

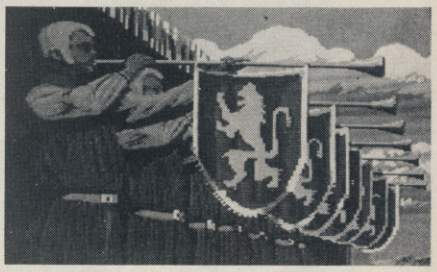
DEFENDER OF THE CROWN —Mirrorsoft

(cassette)

When Defender of the Crown was converted from the Amiga to the little 64, we were very pleased to discover that most of the game, and graphics had remained intact. This however, was the disk version which accessed the disk throughout the game. Now the cassette version's here, but as you might expect, the gameplay has been affected.

The game is set in 12th century England, the idea being to become king. Taking your army through battles, raids, and jousts, superb graphics and informative text chronicles your ups and downs. Almost all the elements of the original Amiga version are there, with a few improvements.

Because in the game, the player decides when to do what (go raiding, joust, besiege a castle etc.), the cassette version involves a lot of tape winding as well as the loading time of each part. All the game's there, but the multi-load does break it up, which spoils it rather. This is rather a shame because the game in itself is excellent, the graphics in particular. If you're willing to put up with a slight delay the multi-load, all the wonders you've read of on the Amiga and the disk version are



yours for the playing. With the exceptional variety of the game and the graphic quality, it's an excellent piece of programming to get it all onto one tape. Well done, Mirrorsoft.

A full review of the Defender disk version can be found in the October '87 issue.

Price: £12.99 cassette **T.H.**

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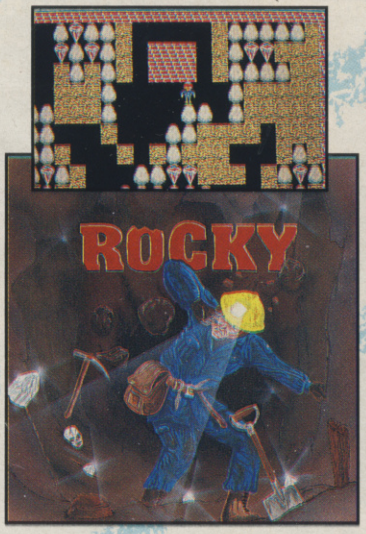

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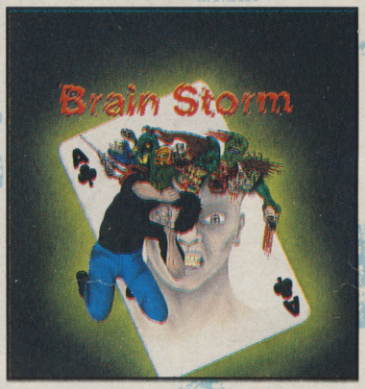

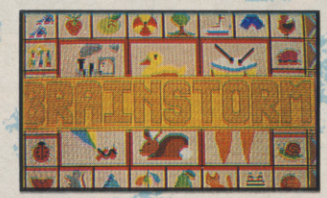

KING SIZE

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C64

AWESOME

Overall: 93%
Rating: AWESOME

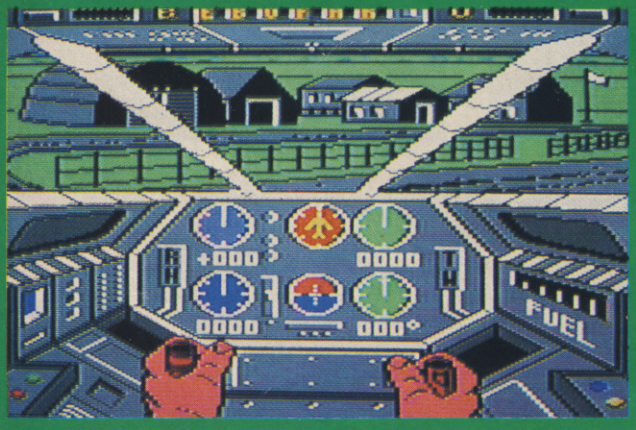
SOLID GOLD

US Gold

It seems that compilations are appearing from everywhere at the moment! Great ideas, but only if they contain genuine hit games, and not just re-releases of old rubbish. Solid Gold, without doubt falls into the former category. The five games that make up the compilation are: Gauntlet, Ace of Aces, Leaderboard, Winter Games and Infiltrator.

For anyone who has been asleep for a year, **GAUNTLET** has to be one of the most successful coin-ops ever. The game is played by one or two players (not four as in the arcade) and involves exploring dungeons in search of treasure. These dungeons are riddled with ghosts, scorcers, lobbers and more, all intent on your destruction. The bird's eye view and room layouts make it into a maze game of sorts.

During the arcade to 64 conversion, two of the four players, and the tiled floor were about all that were lost. Fans of the coin-op found much of the original's playability still intact, together with loads of sprites and smooth scrolling. All this was slightly spoilt by some bugs which were claimed to be intentional, something many (including myself) found hard to believe. Bugs aside, Gauntlet was converted very well, satisfying both coin-op addicts and newcomers.



ACE OF ACES is a flight simulation set in World War II. A number of missions can be selected, ranging from taking out V-1 rockets, to bombing enemy trains. The atmospheric mission selection sequence sets the scene, before you set off. After loading your plane with ammo, some excellent black and white photos show you racing to your plane and taking off.

During flight, some detailed views out of different parts of the plane provide attractive screens for flap and thrust adjustments. A good balance of in-flight action and typical flight sim strategy has been struck and provides a realistic feel.

Flight simulation fans will find it well worth their while, but as with all flight sims, it's not going to appeal to everyone. Ace of Aces was originally a disk-based game, and the cassette therefore is a multi-load, but this shouldn't deter budding war heroes.

LEADERBOARD next, the game that was thought by many to be the ultimate golf simulation, and desservedly so. Some believe that nothing that had gone before it was anywhere near its quality, and only upgrades from the original Leaderboard have supassed it since. One to four players can compete over one of four eighteen hole courses.

Leaderboard's most stiking points are the 3D display and the superb animation of the golfer. Each hole is made up of a set of islands in a giant lake. Timing is the key to the game. To play a shot at the correct strength and direction, a couple of well-timed presses of the button are needed. Some elements of strategy come into play; club selection and a safe or quick route to the hole must be decided upon.

Graphically, the game is excellent, and the few sound effects are realistic. My only concern is that three versions of Leaderboard have been released, and its very likely that the majority of 64 users will already have it. New 64 owners will, on the other hand have many long winter nights brightened up with Leaderboard.

WINTER GAMES was the third in Epyx' games series. In typical Epyx style, the game is played over seven events, all with a 'wintery' theme.

Hot Dogging is nothing to do with a sausage in a roll, but is in fact a kind of freestyle ski-jump. Biathlon is a cross-country ski event with a rifle range of regular intervals. Speed skating is a one on one race over a 250m long stretch of ice. Figure and free skating require good timing to perform any of six moves. Ski-jump is a spectacular simulation of the real thing in which you must avoid ending up in a heap of bones below the ramp. Finally, there's the Bobsled. Guiding the bob through the twists and turns of the course, players compete for the fastest time.

As with all Epyx games, the graphics are superb. All the sprites are very colourful and detailed, as are the backgrounds. Music and sound effects are also well up to scratch, and played with a bunch of friends, it's great fun. The only small 'but' is that each event loads separately, but this is very tolerable.

Finally we have **INFILTRATOR.** Taking the part of Johnny McGibbits, you must carry out a mission to infiltrate a mad leader's base and foil his foul plans. The game is split into two main stages. The first is a helicopter flight simulation. Your object here is to fly to the enemy base, and land without being discovered. On your flight, you'll come across fighter planes to be shot down. They're armed with heat seeking and radar guided missiles that must be decoyed.

On finding the base, you must try to blend in as one of the guards with your false papers. Contained by the perimiter fence, there are buildings which contain vital documents and war plans that must be discovered.

The game's graphics vary from very good to little above average, but the game's atmosphere makes up for this inconsistency. The multi-load cassette version has a few static screens from the disk version missing, but the loading doesn't seriously interfere with the game. Infiltrator is an originally and highly enjoyable game.

Solid Gold includes five high quality games, and comes without any 'fillers', which makes it excellent value. A lot of 64 users will have owned or played these in the past, but for those new to the 64 scene, Solid Gold has to the compilation to buy, which is why we gave it the Oskar as the best of the year.

T.H.

CLEAN CUT

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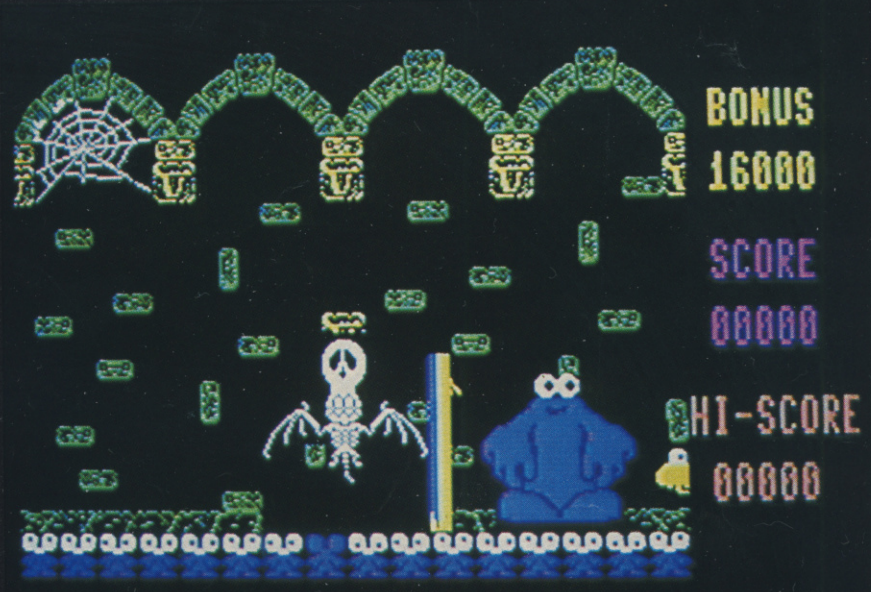
Through the Trapdoor



Piranha

Don Priestley made a name for himself with his past games Popeye, Trapdoor and Flunky which used the same game style with large colourful characters which make good use of hi-res mode. Through the Trapdoor also uses this system resulting in a very similar game to Trapdoor.

The aim of Through the Trapdoor is to rescue Boni the skull from below the trapdoor. You play the parts of Berk, a fat blue friendly monster, and Drutt, a yellow frog-like creature. The game starts with Boni being taken away by a headless skeleton of a bat. Feeling brave, you decide to follow on through the trapdoor.

Landing with a splat, you set out to explore the rooms which are riddled with monsters. A couple of screens away you find a key suspended just below the ceiling which proves very tricky to get hold of. A big green bat flaps around knocking you to the ground before you get a chance to reach it, so he must be lured over to one side first. A number of harder tasks must be performed which include getting Berk to fly, before reaching the exit of the level with the key and Drutt. There are three more sections after this to get through before you rescue Boni.

All the graphics are in hi-res, and move 8 pixels at a time to avoid color clashes, the same as Trapdoor. Berk is large and an excellent representation of his plasticine TV version. Some of his positions and expressions are very amusing. The trouble starts with Drutt, who can't resist a worm. These worms wriggle about, tempting Drutt to nosh them up. I don't know why they were included in the game, because they only serve as an annoyance; if you centre the joystick for a fraction of a second, Drutt starts hopping around wherever he wants, chasing worms. This is more than frustrating when he jumps down a pit and you spend the next half an hour getting him out again.

This game style was well used in Trapdoor. the graphics have a good cartoon style, but the slow joystick response and jerky movement lets them down somewhat. The first section of the game proves very hard to complete, even with the solution to work with, and the lack of screens makes it worse. The puzzles are logical, but either the puzzles or the joystick action should have been made easier.

There's no music, and the sound effects are simple, but suitable.

If you feel you'd enjoy another Trapdoor-type game, then by all means give this a look, or if you've not played one before.

T.H.

Graphics: 86%
Sound: 43%
Playability: 64%
Overall: 60%
Rating: Crisp
Price: £8.95 (cass)
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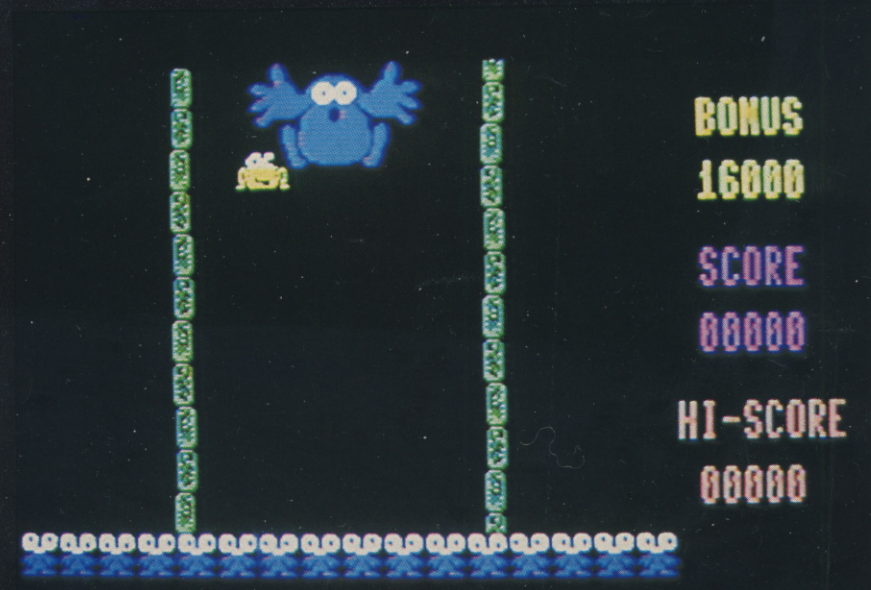

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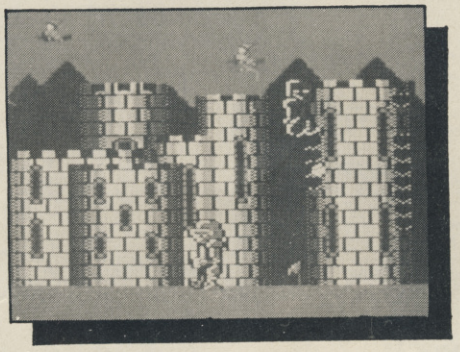
RAMPARTS



Go!

Ramparts... Hmmm, haven't I heard that name somewhere before? No, silly me, I'm thinking of Rampage, a totally different game... or is it?

Arcade goers will no doubt be familiar with the game Rampage which involves taking the part of a giant monster, smashing up sky scrapers King Kong-style. Ramparts has you controlling a giant knight, smashing up castles in a very similar way. The game is obviously a Rampage clone, but this isn't necessarily a bad point.

One or two players simultaneously take part in a race to demolish as many castles as possible (although the inlay would lead you to think three could play). Some nasty bloke known as the Evil One has made you, a couple of knights, into the size of giant monsters. To avenge this dastardly act, you and your friend decide to demolish loads of castles before smashing up the Evil One himself.

Each castle is made up of a number of towers. The only way a castle can be demolished is by smashing down the towers separately. The baddies come in the form of witches, dragons, cannons, catapults, and a few more. These will all do their best to drain your energy. In your favour, there are bits of food which can be found in the castles, but poison food can do you more damage.

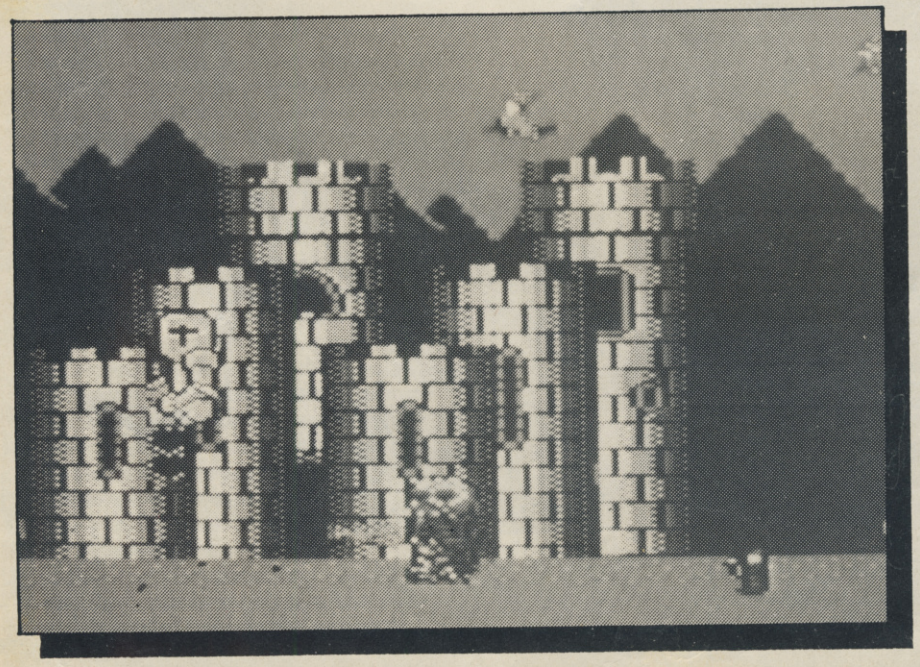
The arcade game Rampage is popular mainly because of its excellent graphics which are large and full of character. I never found the game itself particularly exciting. Ramparts' graphics aren't too impressive; both sprites and backgrounds could well do with some more detail.

Climbing up the side of a tower and thumping it should result ina satisfying crunch, and do some noticable damage, but it unfortunately only makes a small dent. A tower must be dented from top to bottom on both sides before it collapses, and punching and edging a little further up gets tedious very quickly. The various baddies that buzz about the screen can be punched, but it would have been nice to be able to trample the ones on the ground.

Before the game starts, there's a chance to set the type of sound effect of when a tower collapses, but apart from that, the sound effects and music are nothing memorable.

Those particularly fond of the coin-op Rampage will probably wait for the real thing, and I can't see many others getting much out of Ramparts due to the repetitive and simple gameplay.

T.H.



Graphics: 62%
Sound: 58%
Playability: 40%
Overall: 46%
Rating: IFFY
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HORGAN'S HINTS

As my old mate and schoolday mucker Tony Jones used to say, "Too many pokes spoil the broth (if you've got dirty fingers)" but as we're poking games, that doesn't apply, and it's a good job too, just look at this months selection. Last month I said that we'd received a surprisingly large amount of C16 pokes, and here's the proof. We start this month's tips with an excellent one from Aaron Bourfield from West Didsbury.

(C64)

Ubik's Musik:
This is without doubt tip of the month, so a CCI T-shirt, ten quid, and a year's subscription go to Aaron for this... Load the program, reset the computer, and a message telling you to insert a joystick in port two will appear. Press the spacebar and you now have a game of Space Invaders! For some reason, this wouldn't work on our 64C with the Action Replay cartridge reset, but did work on the 128 in 64 mode.

More listings like these from Nick Vernalls of London would be appreciated for those without a reset facility. For each routine, type them in and save them. Run the routine and load the game.

Mega Apocalypse:
10 REM FIDDLED BY NICK VERNALLS
20 FOR A=53209 TO 53261: READ B: POKE A, B: NEXT
30 SYS 53209
40 DATA 32, 44, 247, 32, 108, 245, 169, 76, 141
50 DATA 56, 3, 169, 241, 141, 57, 3, 169, 207
60 DATA 141, 58, 3, 76, 21, 64, 72, 169, 0, 141
70 DATA 178, 3, 169, 208, 141, 179, 3, 104, 76
80 DATA 81, 3, 72, 169, 173, 141, 161, 126, 141
90 DATA 253, 126, 104, 32, 191, 3, 96

Quartet:
10 REM HACKED BY NICK VERNALLS
20 FOR A=53208 TO 53260: READ B: POKE A, B: NEXT
30 SYS 53219
40 DATA 169, 49, 141, 159, 2, 169, 234, 141, 160
50 DATA 2, 96, 169, 216, 141, 40, 3, 169, 207, 141
60 DATA 41, 3, 32, 44, 247, 32, 108, 245, 169, 0
70 DATA 141, 233, 2, 169, 208, 141, 234, 2, 76, 81
80 DATA 3, 169, 173, 141, 202, 118, 169, 96, 141
90 DATA 153, 139, 76, 0, 208

The above gives infinite time and no collision detection.

Road Runner:
10 REM ROAD RUNNER CHEATS BY NICK VERNALLS
20 FOR A=53216 TO 53255: READ B: POKE A, B: NEXT
30 SYS 53216
40 DATA 32, 44, 247, 32, 108, 245, 169, 243
50 DATA 141, 134, 9, 169, 207, 141, 135, 9
60 DATA 76, 16, 8, 169, 0, 141, 63, 16
70 DATA 169, 208, 141, 64, 16, 76, 0, 16
80 DATA 169, 165, 141, 233, 168, 76, 0, 128

The above gives infinite lives.

G. Johansson from Sweden has sent us the following tip.

Freddy Hardest:
The code for the second level is **25425**

Here are a couple of listings and a few reset pokes from Faisal Patel of Carlton Grange in West Yorkshire. Enter, save and run the following routines before loading the game.

Paperboy:
(infinite lives)
10 FOR A=0 TO 28: READ B: POKE 100+A, B: NEXT A
20 DATA 169, 4, 141, 49, 8, 185, 149, 78, 153, 52
30 DATA 4, 136, 208, 247, 76, 13, 8, 169, 96, 141
40 DATA 166, 41, 141, 107, 40, 76, 52, 8, 0

Deathwish III:
(unlimited energy)
3 FOR I=512 TO 544: READ A:POKE I, A: C=C+A: NEXT I: IF C=3301 THEN SYS 536
4 PRINT "ERROR IN DATA!"
5 DATA 169, 13, 141, 167, 5, 169, 2, 141, 168, 5, 76, 0, 4, 169, 173, 141, 94, 82, 206, 56, 87, 76, 0
6 DATA 198, 157, 32, 86, 245, 78, 199, 2, 96

To use these next pokes, load the game, reset and type the pokes and sys calls followed by return.

Nemesis:
POKE 5868, 255
SYS 57688
(255 lives)

Pac Man:
POKE 5737, 254
SYS 2064
(unlimite lives)

BMX Simulator:
POKE 11617, 138
POKE 11618, 2
SYS 4096
(unlimited lives)

Living Daylights:
POKE 4390, 238
SYS 4352
(unlimited energy)

Mohammed Haroon of Glasgow has these pokes to offer.

Falcon Patrol II:
Load, reset and type **POKE 28768, 165:SYS 28672 (RETURN)** to obtain infinite planes.

The Captive:
Load the game, reset and type:
FOR A=10560 TO 10687: POKE A, 0:NEXT (RETURN)
FOR A=10752 TO 11007: POKE A,0:NEXT (RETURN)
FOR A=11584 TO 11839: POKE A, 0:NEXT (RETURN)
SYS 4269 (RETURN)

This removes all nasties.

Curse of Sherwood:
Help is at hand for Stewart Robertson who requested a poke for Curse of Sherwood.
Load, reset and type:
POKE 6603, (3-255 No. of lives you want) **(RETURN)**
OR
POKE 6403, 169 (RETURN) for infinite lives
SYS 17443 (RETURN) starts the game

You can thank Mr R Troughton from Cowling in West Yorks, for this generous helping of jam roly-poly, sorry, I mean pokes.

Radius:
Enter **MEANTEAM** as your name for 256 lives. Also, if you want to see the "really brill demo", enter and run this program. Press play to attempt loading the game, but instead of the game, your screen will be illuminated by said demo.
100 DATA 169, 200, 141, 40, 3, 169, 207, 141, 41, 3, 133, 157, 32, 86, 245
110 DATA 169, 211, 141, 237, 2, 169, 207, 141, 238, 2, 76, 81, 3, 169, 49
120 DATA 141, 159, 2, 169, 234, 141, 160, 2, 96, 169, 169, 141, 205, 1, 169
130 DATA 141, 141, 207, 1, 169, 0, 141, 208, 1. 141, 211, 1, 169, 221, 141
140 DATA 209, 1, 169, 76, 141, 210, 1, 169, 159, 141, 212, 1, 141, 206, 1
150 DATA 76, 0, 224
160 FOR L=53164 TO 53241: READ A: C=C+A: POKE L, A:NEXT
170 IF C=9650 THEN POKE 157, 128: SYS 53164
180 PRINT "ERROR IN DATA STATEMENTS"
190 REM + ROBERT TROUGHTON: DECEMBER 87 +

Scary Monsters:
Enter and run this listing for unlimited lives.
100 DATA 32, 86, 245, 169, 32, 141, 155, 3, 169, 0, 141, 156, 3, 169, 208
110 DATA 141, 157, 3, 96, 72, 169, 165, 141, 151, 178, 104, 141, 32, 208, 96
120 DATA —1
130 FOR L=53229 TO 53263: READ A: IF A=—1 THEN SYS 53229
140 POKE L, A:NEXT

On the Tiles:
The above listing can also be used with On The Tiles for unlimited lives by changing the 151, 178, on line 110 to 169, 13

Shadow Skimmer:
Load the game and reset, then enter:
POKE 25761, 234:SYS 31232 (RETURN)

Wonderboy:
Load, reset and enter:
POKE 2676, 252:SYS 2112

Wizball:
Enter and run this listing for unlimited lives:

```
10 DATA 32, 44, 247, 32, 108, 245
20 DATA 169, 208, 141, 62, 4, 76, 99
30 DATA 3, 169, 96, 141, 39, 107, 206
40 DATA 32, 208, 76, 80, 0, —1
50 FOR L=53229 TO 53263: READ A
60 IF A=—1 THEN SYS 53229
70 POKE L, A:NEXT
```

Alternatively, type **WIZBORE** on the title screen for invunerability. The border will flash when it registers, and you may have to type it more than once.

Exolon:
I know we printed an infinite lives poke last month, but these can make your mission even easier still. Load, reset and type:
POKE 7427, 173 (infinite lives)
POKE 5650, 173 (infinite grenades)
POKE 7651, 173 (infinite ammo)
SYS 2061 starts the game.

Sabre Wulf:
For infinite lives, load, reset and type:
POKE 45219, 173:SYS 3328

Flying Shark:
More infinite lives, just load, reset and type:
POKE 7929, 173:SYS 2061

Zynaps:
Every time you get killed, and the blue Zynaps logo appears, tap run/stop and restore, and you'll restart on the next level. An infinite lives poke will also come in handy, so here it is.
POKE 47106, 189:SYS 32769

International Karate +:
Here's one for the girls:
Hold down the **S** and **E** keys at the same time, and two or even three of the men will drop their trousers. Corr!

(C16)

What have we here? So many C16 pokes you won't know where to start! How about these from Roy Robinson...

As always, load, reset and type the pokes followed by return.

Spiky Harold:
POKE 8680, 96: POKE 8688, 96 (lets you walk through all nasties)
POKE 8587, 234: POKE 8598, 234 (for infinite lives)
SYS 4096 starts the game

Squirm:
POKE 10263,0 (you can go through the Squirms, but still get eggs and glow worms)
POKE 9827,0 (for infinite light)
POKE 11899,255 (only leaves queen squirm on the screen)
SYS 9220 starts the game.

Power Ball:
Press reset as soon as the border stops flashing.
POKE 8712,234
POKE 8713,234
POKE 8714,234
POKE 8715,234
SYS 5751 to start the game.

P.O.D.:
Enter the monitor and type:
.24FB NOP (RETURN)
G29CE

Dirty Den:
POKE 7694,255
SYS 4112

G-Man:
Press reset as in Power Ball.
POKE 10809,20 (gives 20 lives)
POKE 11458,11 (faster speed)
POKE 11560,96 (removes comets)
SYS 10240

Jet Set Willy:
POKE 9471,49 (takes away a bit of the wall in the ballroom east)
POKE 10874, 234 (infinite lives)
POKE 10863,0 (allows you to walk through nasties un-harmed)
SYS 10752 (starts the game)

Bombjack:
Enter monitor, press run/stop and reset.
Type **M1605** and change the **03** to **00** (this takes away all nasties)
Type **M3243** and charge the **13** to **00** (gives 255 lives)
G3117 starts the game.

Christopher Cave of Sheffield has some more C16 pokes.

Kickstart:
POKE 7792,255 (for loads of time)
SYS 8192
While on the title screen, press 3 and 4 together and you can choose which level to you start on.

Shark:
POKE 8210,255 (gives 255 lives)
SYS 8192 starts the game.

Fire Ant:
Press RUN/STOP and RESET to enter the monitor before entering:
> **1B57 FF** (255 lives)
> **1A07 FF** (to walk through scorpions, but strange things may happen)
G3F90 starts the game.

Trailblazer:
Enter the monitor then:
> **2EE4 EA** (infinite time)
> **2799 FF** (for 255 jumps)
> **2FB8 60** (so you can't fall down holes)

G24CO starts game.

These are some passwords for the levels to be typed in on the title screen.
2:dares, 3:waxed, 4:razed, 5:cards, 6:craze, 7:wears, 8:cares, 9:weeds, 10:dazed, 13:wares, 15:rears, 16:dread

David Bridges has sent us these pokes.

Dork's Dilema:
Enter the monitor then...
A 3205 JMP $19BA (RETURN TWICE)
G 196B (RETURN)
SYS 6507 (RETURN) to start

Robin to the Rescue:
A 1033 NOP (RETURN TWICE)
G 1010 (RETURN)
SYS 4112 (RETURN)
(stops death from men and arrows)

(+4)

Just one for the +4 from Mohammed Haroon.

Icicle Works:
Load the game, but don't play before entering the code because it will crash. Immediately after it has loaded, hold down the run/stop key and reset, then type:
A 116C LDA #$FF (RETURN)

G 1000 (RETURN)
This won't give you infinite lives, but after a while the bug in the game will.

(Vic 20)

If anyone still uses this as a computer and not as a door stop, then these pokes from J Hadlow might just breathe some life into those mouldy oldies. Don't say we don't cover the whole range of Commodore computers.

Pac Man:
Load the last part of the game and type:
POKE 41900 (RETURN)
SYS 4110 (RETURN)

Motor Mouse:
Load the last part and type:
POKE 4908,6 (RETURN)
RUN (RETURN)

Abducter:
Load the last part and type:
POKE 6869,255 (RETURN)
RUN (RETURN)

Ice:
Load as before:
POKE 4132,255 (RETURN)
RUN (RETURN)

One again we come to the end of another month's tips, so when you've slept off the Christmas dinner, and recovered from that half bottle of whisky you washed it down with, hack, map and cheat your latest games, and send them to:

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Tony Horgan

It's here-The return of Elvin Atombender!

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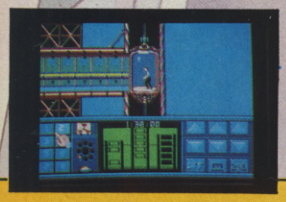
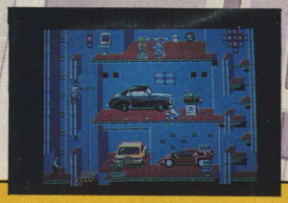
Successfully dispose of Elvin and your quest is half over! Now your Mission becomes truly Impossible as you strive to escape the towers, avoiding guards, robots, mines, trap doors and elevators without detection!

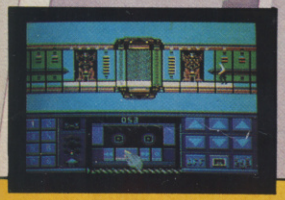


...From the lift you enter the first room...

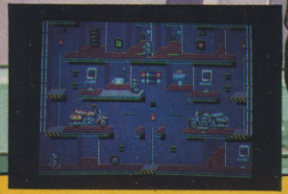
...But where to next?...



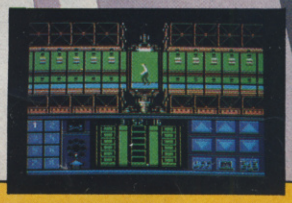
...Who or what is lurking behind these cars?...



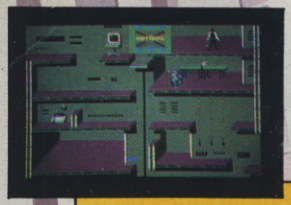
...Can you access the next tower?...



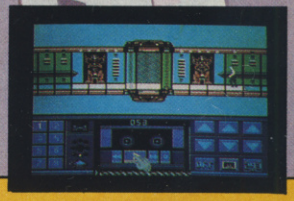
...Could the final P.I.N. number be here?...



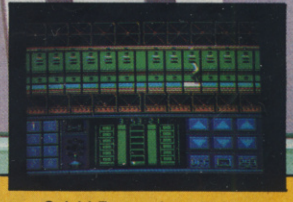
...Running into more trouble?...



...Why is the robot guarding that table?...



...A message on the tape recorder?...



...Quick! Escape from Elvin!!...

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EPYX®

720°

US Gold

US Gold's contribution to the recent trend of skateboard computer games comes in the shape of a conversion from the coin-op 720°. The name alone will no-doubt make it sell in large amounts.

The game is set in Skate City. This city is more like a large town square in size, and has some well designed architecture that's ideal for skating. Ramps and water jumps are in abundance, and these must be made good use of if you intend staying in the game. The arcade machine uses an unusual joystick to control the skater; instead of having the normal up/down/left/right positions, it moves in a circle, rotating the skater with it. The control method on the 64 is obviously different, but has the same feel to it.

You start with three tickets which give access to one of the four parks. As you skate around the city, jumping and spinning to earn points, a timer ticks down. When the time runs out, the message "Skate or die!" appears. You must get to the nearest open park or it's curtains. The four parks are the half-pipe, and three variations on a series of downhill ramps: the slalom, the jumps and plain downhill. Cash prizes and medals are awarded here for the amount of tricks (360's or 720's) that you pull off, and any remaining time. I was disappointed at the lack of moves available on the half-pipe (aerials only), but I suppose that's down to memory restrictions.

With cash earned from the parks, you pay a visit to one of the shops which sell faster boards, shoes to make you jump higher, and pads and helmets for faster recovery from wipe-outs. Apart the dangers of swarms of bees, there are lego-land unicyclists, body builders, cars, scooters and frisbee throwers which all threaten to de-board you at the slightest touch.

The general look of the coin-op is very bright and attractive, so I was surprised at the choice of back ground colours on the 64. Instead of light greys blues and reds, the overall look is dark, with black, grey, dark blue and orange used. It may seem a small point, but a simple colour change could brighten it up no end. In contrast, the sprites are very colourful, but let down by a lack of resolution, although the main skater sprite is well done.

A couple of simple sound effects and a dodgy version of the coin-op's music emanate from the sound chip, and an audio recording of the original soundtrack comes on the reverse of the cassette.

720° is very enjoyable to play, and does well to generate a similar feel to the arcade version. It's easy to get into and looks good in places, such as the realistic tilting of the board. 720° isn't a bad conversion from the arcade considering the machine's capabilities and for skate freaks it is going to be the ideal thing to play when the snow and ice stop them hitting the paving stones, I've some doubts as to whether you'll still be playing it when the sun comes back but then the real skating has got to be the best fun. (I have to say that as Nick the office skate freak will crown me with the Pacer board he's holding over my head!)

T.H.

Graphics:	62%
Sound:	45%
Playability:	78%
Overall:	75%
Rating:	CRISP
Price:	£9.99 (cass)
	£11.99 (disk)

You're cool, the engine's hot, the girl's gorgeous, a tank full of gas and an open road.... the rest is up to you..!

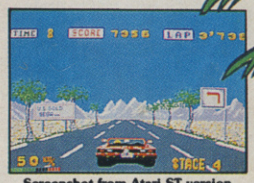
Screenshot from Amstrad version.

Out Run™

Screenshot from CBM 64/128 version.

Screenshot from Spectrum version.

START



Screenshot from Atari ST version.

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*Atari ST version will be available later in December.

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MEGAREVIEW

Street Sports Basketball

Epyx

Epyx, famous for their consistently top quality sports games are about to release their latest masterpiece. Programmed by the author of International Basketball, it continues the theme from Street Sports Baseball, which as we have reported in recent CCI's is stated to be a continuing series of games played in the city streets of the U.S.A.

First, a play area must be selected from a choice of four. You can choose to play in the school court, a car park, or one of two areas set in the suburbs. That done, it's time to pick your team. After a toss of a coin to decide who gets first pick, a description of each player can be called up. Some are faster, others can impress with slam dunks or hook shots, and others are good team players. This is an excellent idea as it provides almost infinite variations for the game.

The appropriate court is then loaded and the game can get underway. One final selection is the score at which the game will end. One player is controlled at any one time, usually the one nearest the ball, but not always. Each player can run, jump, pass and shoot as normal. Part of what makes this so much more fun than other basketball games, is the ability to play hook shots and slam dunks. These are especially satisfying when you see a little kid pulling off a shot that the Harlem Globe Trotters would be proud of.

The street sport element of the game goes further than picking teams and make-shift courts. Playing in your neighbours' drive is bound to have its hazards. Dribbling the ball must be timed to avoid kerbs and manhole covers which give the ball an unpredictable bounce, and oily patches tend to be rather slippery.

International Basketball is one of my favourite games of all time, and this has all the best bits and loads more. The backgrounds are very interestingly detailed and colourful, the suburbs in particular. Each player has distinct differences in style and look, and are easily recognised. Each has a well animated head, and puts similar sports sims to shame. Basketball is also noticably faster than any other game of this type. OK, so the scrolling doesn't keep up with the ball on long shots, but all the players move around smoothly and quickly.

When played against the computer, three skill levels can be selected. These will allow a beginning player to get the hang of the game, as the easy level is very easy indeed, but it won't take long to beat the advanced level.

Multi-loads are a pain on cassette, but as most of the loading takes place before the game starts, it shouldn't be hard to tollerate. The version reviewed here is on disk, but I can't see there being any differences for cassette users.

If you liked International Basketball, Street Sports Basketball should on no account be missed. The better sound, superb graphics, and the more detailed gameplay will make this a favourite for a long time to come.

T.H.

Graphics:	95%
Sound:	74%
Playability:	94%
Overall:	94%
Rating:	AWESOME
Price:	£9.99 (cass)
	£11.99 (disk)

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C64

IFFY

Mask II
Gremlin

Why do software houses follow this trend of writing a computer game of almost every toy on the market? The toys/comics/cartoon series are very unoriginal, so what hope is there for an original and entertaining computer game? Not one of the He Man, Thunder Cats, Transformers, Gobots, or Action Force games have held my attention for more than a few minutes. Mask II is sadley no exception. The probelm surely lies in the fact that most of these toys are for the 5-9 year old age group but the computer games — certainly at full price — are for 11 year olds and up. Software houses would probably save themselves some cash if they kept this in mind.

Mask II starts at HQ, where you're given your mission briefing, and must select the three members of the Mask team most suited to the mission. This part looks very good, as the Mask computer displays a picture and details of each member. A promising start, but from here on it's downhill all the way. With your team selected, moving the cursor to the load icon continues the game. The mission is now loaded, and takes its time about it.

The player begins with control of the first member chosen. Some of these can take the form of two vehicles, changing automatically from jeep to speed boat, or converting into a helicopter. Pressing 1, 2, or 3 on the keyboard switches control to another team member. Each mission takes place over a horizontally scrolling background in much the same style as Moon Patrol. The terrain is made up of hills, lakes, bridges and pits. Team work is essential to success, as some vehicles will be destroyed by lakes, and others will be trapped in pits. Changing between vehicles needs to be done frequently, and it can be tricky keeping control whilst using the keyboard. Each vehicle has independant fuel and damage levels which must be watched, and control changed if one is getting low. When one has been destroyed, the chances are that you won't be able to get any further, so keeping each in good condition is important.

Playing the game, there's nothing much to get excited about. Dodging the enemy's bullets is a matter of luck, as is shooting them. When you do complete a mission, a very unsatisfactory message appears saying "Mission Accomplished", not a tune, picture or graphic effect of any sort rewards the player.

After the long-winded loading procedure, I almost lost interest with the game very quickly. It just doesn't have that something to work up a sweaty palm and keep you coming back. It was saved from a 'dodgy' rating only by its excellently colourful graphics and smooth scrolling. One of its most irritating features is the way that the whole game has to be re-loaded to play another mission.

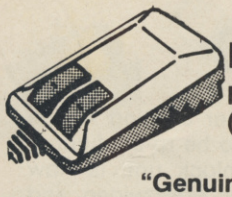
Mask II looks good, the sprites and backgrounds are well up to scratch, but its gameplay and sound are very forgettable. Perhaps fans of the toys will like it more than I did, but then they will probably find it too hard for their age/skill level.

T.H.

Graphics: 80%
Sound: 56%
Playability: 37%
Overall: 43%
Rating: IFFY
Price: £9.99 (cass)
£14.99 (disk)

NEOS MOUSE + SOFTWARE

★ (THE COMMODORE MOUSE) ★



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THREE OF A KIND

The Amiga User Group's Tony Lacey has been for a long time an Amiga lover. Here he takes a look at the three Amigas, how they emerged and what you might consider before you fall for the Amiga's charms.

Not one, not two, but three Amigas to choose from! Which one would suit you? What's the difference between the models?

The three Amigas currently on the market are: The A500, the A1000 and the A2000.

They are all OSA (Open System Architecture) which means they are all easily expandable.

Oddly enough the first Amiga to burst on the computing scene was the A1000. Much to the shock and horror of an eagerly awaiting Commodore buying public because the initial price was £1,400,00. A lot of 64 and 128 owners felt betrayed and just could not afford to upgrade, much as they wanted to.

It wasn't only the fact that the machine was all powerful, it looked the way a computer should — detachable keyboard, with keypad, separate cursor keys. A sturdy CPU with inbuilt 3.5 drive (at the fron) mouse and joystick ports on the right side.

The basic unit came with 256K of inbuilt memory that could easily be expanded to 512K by an additional memory unit which fitted into a socket, cleverly concealed at the front of the machine.

A further expansion port, for external memory, was located just past the two joystick ports. Be removing the cover, it was easy to fit another two megs, adding even more power to the Amiga. In all, a further 8 megs of external memory could be added.

The Amiga monitor could fit snugly on top of the CPU of the A1000 which meant a saving on space and no interference between monitor and computer. (There being a screened lid on the inside of the Amiga preventing such interference.)

The other point I particularly like about the A1000 which sadly is missing from the other two, is that the keyboard fits under the CPU when not in use thereby preventing dust of little fingers to get at it!

However, the keyboard itself, or rather the keys, are not as other computer keys; they are, for reasons of space closely grouped and so hitting two at a time is not un-common. But, that's something that you can avoid once get familiar with the computers.

The main problem with all three machines has been with the Amigas operating system. The first version was surprisingly called 1.1 and with the A1000 on power-up you had to load in "kickstart" which basically does what it says — kickstarts the machine ready for a program disk. This was fine for a while, but 1.1 was soon discovered to have a few bugs and so 1.2 was released. This meant that some software written under 1.1 was not suited to the newer 1.2 OS.

But, that wasn't too much of a problem — you had to load in kickstart anyway so why not have two versions, 1.1 and 1.2 depending on what software you were going to load in after it. Quite straight forward really until the other two Amigas were launched with kickstart version 1.2 on a ROM chip, inside the machine!

Shock! Horror! That now meant that older software that only ran under 1.1 wouldn't work with these new machines. I am glad to say that most of the software houses re-wrote their software to run under 1.2 but there are still programs that will not run unless 1.1 is loaded first!

Last March both in Hanover and London the two new Amigas the A500 and the A2000 were launched.

It was now clear and also stated by the Commodore Sales people that here were two machines which wouod appeal to two totally different markets. The A500 the 'games machine' (Ugh! How I hate that saying!) and the A2000 the business machine.

The A500 is a totally different looking machine to its sister. The keyboard and main unit all one, with the disk drive on the right hand side. No room to place a monitor directly on top.

If you get the impression I don't like the machine you would be almost right. The one thing I do like about the 500 is that expandability up to 1 meg is made easier than on the 1000, but thats about all.

If the 500 was launched as a bottom-end market machine and aimed at people who maybe couldn't afford an extra £300 or so on a monitor why was a TV modulator not included?

The modulator is the A500 owners life-line to their domestic TV's, but it looks a monstrosity sticking out the back of the machine and costs extra as well!

The other no-no as far as I am concerned regarding the 500 is that because it is lower to the ground than the 1000 the expansion port is almost inaccessible to existing expansion units such as a Megaboard II, or for that matter other add-ons that use that port, for example drawing tablets.

Until recently other existing Amiga hardware has had to be re-configured for the 500. A genlock unti is now available. This links your video and Amiga together.

On the other hand the A2000 has 1 meg of memory as standard and looks like a tank. Or rather it looks more like a Commodore PC. At least an Amiga that has PC emulation!

But, not that easy to put together. The add-on cards that fit into the slots inside the 2000 can be pesky like devils to get in correctly so if you are thinking of purchasing a 2000 with PC Bridge Board et al, then let your friendly dealer install them for you.

The keyboard is a cross between an Amiga and PC but, has the feel of a PC. There are the PC only keys that do nothing when the machine is in Amiga mode. The cursor keys are out on their own and are in a different formation but once mastered present no problem.

The keyboard fits in the front as do the mouse ports, but they are set deep inside and connection can get fiddly. The mouse is also slightly different and is a little bit more 'over responsive' on some surfaces.

Connections at the back are different again on the 2000, it being IBM compatible so, the parallel and serial connecters have been changed. Also changed at the back, or rather removed, is the 5 volt rails to power things like DigiView.

Genlock is another fiddly affair with the 2000 not having a composite video output. There is, however, an internal slot for a PAL encoder or Genlock board.

On power-up the fan comes into operation. This sounds like hurricane Charlie is on its way. Perhaps a high-powered fan is fine if you've got all the extra add-ons going — it keeps them all cool, but man, is it noisy! There are slots in the front of the 2000 for your IBM 5.25 drive and an extra Amiga 3.5 drive. There is also a light ready for the hard drive should you so wish to purchase one.

On the 1000, IBM compatibility is via a unit called 'Sidecar.' It fits into the expansion port and has a 5.25 drive inbuilt. A technicion once tole me that the Sidecar is really a Commodore PC without a monitor output. That being the case why have I heard of so many problems with it?

But the Sidecar was brought out when there was no alternative to PC emulation on your Amiga. That was before the 2000 was launched. Now, with the 2000 who needs a Sidecar to run PC software?

Which Amiga you choose depends on what you want to use it for — home, business, leisure, graphics, etc. T.L.

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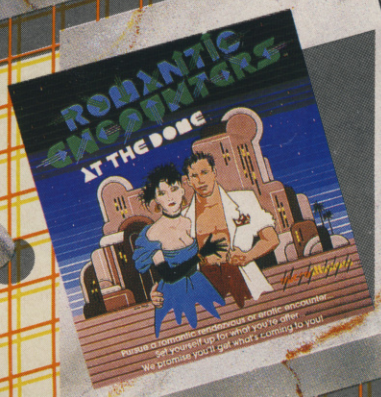

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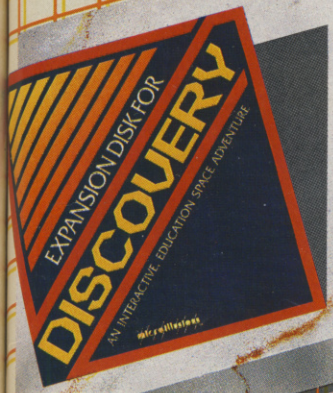

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GRID START

Anco

At the other end of the price range from EA's Test Drive, there's Anco's Grid Start. The object of the game is to race 23 other cars around one of six tracks from around the world, and finish in first place.

The familiar 3D view made popular by Pole Position is the display method. Your car is controlled by steering, accelerating, braking and changing between five gears. There's also a turbo boost for faster acceleration. Before racing, the player can choose the track, and whether to compete or practice. In practice, the game is just the same as in competing, except that the booster cannot be used, and it takes place over 99 laps as opposed to five in a competition.

The race starts with you at pole position on the grid. The light turns green and the opponents zoom off. For some reason, you stay at the grid for a couple of seconds, being overtaken by the others. When you do get going, the red and white road kerbs move very smoothly, forming neat bends. Signs at the side of the road have a good number of frames as they grow from the horizon, but are unfortunately spoilt by a second image that *flickers behind.*

Opponents' cars are acceptably drawn, with just about enough different sized frames to give a 3D effect. The obligatory scrolling horizon mountains/city has been drawn far too large. At the size it is, the car would seem to reach it in no time, but it just serves to enhance the effect when turning a corner. Hay bales also line the bends, I would have thought to serve as crash barriers, but a collision with one results in your car exploding!

So far, it may sound as if Grid Start is a load of rubbish. This isn't the case, because although it has these faults, the general gameplay is very good. Perhaps I've been spoilt by all these full price games, but there seems to be something missing in the gameplay. There's a strange feeling of lonliness, maybe because the apparently close horizon is never reached. In its favour, Grid Start has the smoothest road movement I can remember seeing on any home computer race game, and requires a substantial amount of skill and concentration to complete. Not only that, I know that some prefer this to EA's effort for the sheer excitement Grid Start reaches.

At the price (£9.95), you could do a lot worse than buy this. There's nothing new in Grid Start, but it is a first class attempt at a racing game, worth a very close look if speeding around a track hell for leather is your scene.

T.H.

Price: £9.95

NINJA MISSION

Melbourne House

Mastertronic's latest contribution to the arcade scene comes in the shape of two Amiga-based machines, known as the Super Select Systems. These machines give the player a choice of five independent games to play, all house in one cabinet. One has a sporting flavour, containing Leaderboard, World Darts, Sport Time Bowling, Table Hockey, and Pool. The other follows the more conventional arcade themes, and includes Xenon, Space Ranger, Blasta Ball, Sidewinder, and Ninja Mission. For this last one you don't have to rush to the draughty arcades but can play it at home on your own Amiga.

Taking the part of a heroic ninja, it's down to you to recover the seven jade idols of the village of Tambo Machi, which were stolen by the evil Akuma. Akuma is a powerful force, and has many faithful followers experienced in martial arts, who will fight to the death on his command. The seven idols have been placed around his fifteen screen fortress.

To begin with, Ninja Mission seems no more than another Exploding Fist clone. Akuma's fortress is made up of five floors, each one screen smaller than the one below. On the first floor, the enemies must be defeated one at a time using sixteen moves, which includes throwing knives and stars. When all the idols have been collected, with a sudden surge of energy, you leap through a hole in the ceiling, entering the next level.

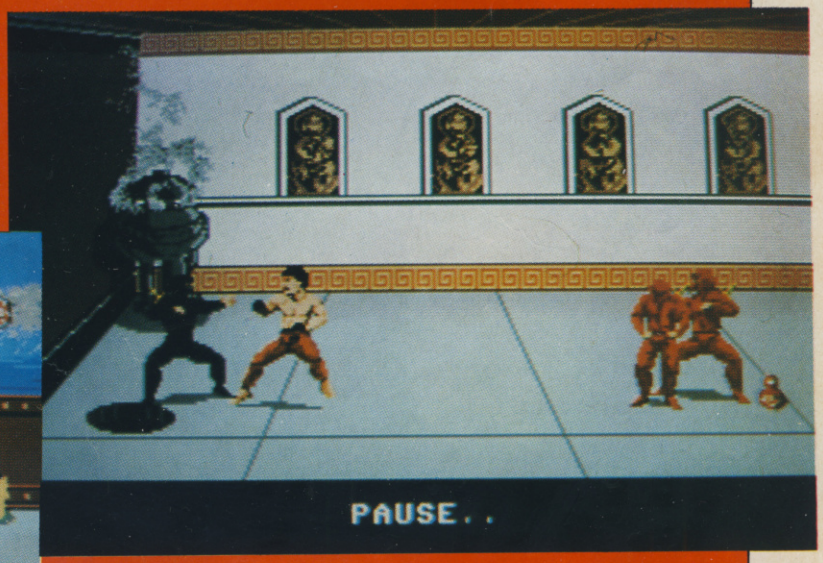
As you'd expect, the fighting gets harder as you progress through the game. Instead of single fighters, you encounter gangs of up to four at once. The knives and stars are a quick and safe way of killing the first opponents, but evil ninjas which appear later, pick up stars and throw them back at you. This introduces a new, if minor element to the much-used game style. I can't say there's much else that we've not all seen before, but it is perhaps easier to get into quickly because of this.

Although not amazing in the graphics department, the sprites are well drawn and attractively large. The main character in particular has some realistic animation, his jumping and somersaulting are the most believable of all the martial arts games around. I would have liked to see some more interesting backgrounds, the existing ones are a little lacking in detail.

On the whole, Ninja Mission is well done, but the exception is its sound. A rather repetitive oriental tune plays, occasionally giving way to quiet and rather weak sound effects.

I'd prefer to see more original games appearing for the Amiga, but at the price (£9.95) this has to be an outstanding buy. With Mastertronic writing their own arcade games, and thus saving money others would spend buying rights to a game, perhaps it'll force the normal price of 16-bit software down to a more reasonable level. We live in hope. Whilst not original, or particularly innovative in any area, Ninja Mission is great fun, and when compared to Karate Kid for example, is also exceptionally good value for money. Highly recommended.

Price: £9.95 *B.V.*



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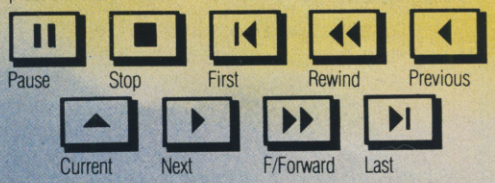

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PROMISE — THE SPELLCHECKER

Robtek brings in an interesting addition to Amiga word processing

The majority of 'serious' users of microcomputers will own and use a word-processing package of one description or another. For many, a simple package may well be quite sufficient. For those of us who often create large documents the tedium of checking for spelling mistakes and punctuation errors can be eased by the use of spelling checkers, of which 'PROMISE' is one of the latest. Created by 'The Other Guys' it is designed to run on an AMIGA with at least 512k of storage. It comes supplied on a single 3.5" disk together with a clearly written twenty page booklet of operating instructions. There are really two major components to PROMISE. They are a spelling and punctuation checker and a spelling helper. The main function of the package is performed by the checker, with the helper giving user access to the dictionary to look up words while using a word processor. Most document formats appear to be supported, including Textcraft 1.0, FTXT IFF files (as used by later versions of Textcraft), and both formatted and unformatted ASCII files. Scribble and Notepad both use formatted ASCII files whilst ED, EMACS, and EDIT use unformatted. Scribble's Dot commands pose no problems once the checker has been told to ignore the first occurrence. It is not necessary for the user to tell PROMISE which format the document is in as the package detects the format automatically. The supplied dictionary contains 95,000 words and may be added to by building your own user-defined 'Custom Dictionaries'.

The spelling checker loads the main dictionary into memory at startup and creates a null custom dictionary by default. Once the main dictionary and index are loaded the user may then elect to load the custom ones. More than one custom dictionary may be maintained, so for example a student may keep specialist engineering terms in one and chemistry terms in another. This split by function could prove to be a very useful feature of the tool. The punctuation checking function ensures that simple rules are obeyed such as starting sentences with a capital letter and finishing them with a full-stop. It also ensures that punctuation marks are either followed by a space or are at the end of a line.

There are three methods by which PROMISE may be invoked. Inserting the disk in df0: at the 'Insert Workbench' prompt, double clicking its icon or from a CLI window by entering 'RUN PROMISE: SPELLCHECK'. Problems can occur if you have less than 360k of free memory available if you invoke it from within workbench.

PROMISE is window driven and makes good use of the Amiga's window/gadget facilities. The loading and saving of files such as custom dictionaries and documents is menu driven from within directory windows. These are used to display and select disk files, enter filenames and to change disk drives. To check a document it is first necessary to click the 'select input file' gadget, this opens a directory window from which you may select the file to be checked. Once you have found the correct file you start the checker with the 'start spelling check' gadget. If PROMISE finds a word that is not in one of its directionaries it displays it in a 'text display box' and offers you a number of options. These are: correct it, ignore it this occurrence, ignore all occurrences throughout the document, or to add it to a custom dictionary. If you believe the spelling of the word to be wrong but don't really know how to spell it then you can invoke the spelling helper which is accessible either from the spelling checker or stand-alone. It appears in its own window and is also gadget driven. To find the correct spelling you need only provide the letters you know. The missing portions can be substituted with wild-card characters, '?' for unknown letters and '★' for an unknown number of letters. When invoked from the checker the system attempts to supply a reasonable search argument. There is a very clear description of how to use the wild-card technique in the instruction booklet. It is a good idea to try this out before using the checker as the attempt made by the checker to define a pattern to locate is not always what the user may really want. I noticed that it was not very good at locating words ending in apostrophes. It is a simple matter to correct the supplied letter pattern though, and once this is done the word can be found (if it is in the dictionary).

Most users will be content to maintain their custom dictionaries by loading at the start of a checking session and resaving with the new words learned in that session, but it is possible to edit the custom dictionaries using any editor or word processor that can read an ASCII file. If a user wishes to combine different custom dictionaries it is a simple matter of invoking the checker and loading the dictionaries in turn. These can then be saved to produce a combined dictionary which can be loaded in one operation from now on. The manual loading of custom dictionaries is both a strength and a weakness of this package. It takes a little effort to load the desired custom dictionaries but this can give a very versatile dictionary structure to the skilled user.

PROMISE is a very helpful tool for users of word processors which do not contain a spelling checker. It is claimed that it can check over a thousand words per minute. It certainly seems fast in practice. The speed is probably derived from the fact that the entire dictionary is loaded into memory before any checking is done. It does mean, however, that there is a performance trade off as the program takes a while to load and get started but runs rapidly once in memory. Even users of Scribble which has its own built in dictionary of over 40,000 words may be interested in PROMISE because of its larger vocabulary and additional punctuation checker function. Given the very user friendly implementation of PROMISE, anyone who is looking for a good, expandable, and above all else, easy to use document checking facility should check this one out!

A.S.

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VIZAWRITE

The home publishing revolution continues to gain momentum — and new converts. Peter Lee evaluates the latest contender in a booming WYSIWYG market.

When people look back on 1987 it may well be seen as the landmark year when desktop publishing firmly established itself as a worthwhile business tool.

And helping lay down these foundations is the Amiga: what better machine to consummate the marriage of graphics and text? It has the power and potential to help you harness your ideas and convey them professionally.

But you do need the software that is capable of doing the job; word processors are invaluable it is true, but today, presentation is becoming more important — and that is why desktop publishing is continuing to grow in popularity.

Into this important and lively market comes Desktop VizaWrite from VizaWrite 64 author *Kelvin Lacy.*

VizaWrite is a true home publishing system, incorporating both word-processing capabilities and graphic reproduction; it comes on an unprotected disk to ease backups and transfer to hard-disk, and supports memory expansion and mult-tasking.

The program gives you what you need — an exact representation on screen of what your document will look like when it is printed. It allows use of multiple fonts and text style of any font can be changed globally throughout a selected range.

Because of the display mode, used characters are double-sized so although the format you see is the format you get, it is easy to lose your sense or proportion over the overall design

VizaWrite comes on a disk containing Workbench so you can boot up the program straight away; any documents already created are saved with an icon to enable you to select and enter them from workbench — a very useful touch, even if a disk full of documents takes a while to display its contents.

The working screen, white on powder blue, reminded me of Textcraft — icons are displayed at the top of the first page, graphically showing the text format and spacing — justified, ragged left or right and centred. Clicking on the appropriate box highlights your choice, and the if any text has been entered, it configures itself to these limits.

Also on screen is a somewhat large ruler, showing margins and tabs — which can easily be altered at any time. Page numbers, headers and footers (if they're present) are also shown.

The program is equipped with the standard Amiga Workbench fonts — that is to say they're pretty banel. However VizaWrite allows other fonts to be loaded from third-part disks. I have never known what makes the default fonts so good that program developers fall over themselves to use them.

go right ahead and input text. The screen shows part of an ordinary page and scrolls upwards as the end of the screen is reached.

Because of the display mode used, characters are double-sized so although the format you see is the format you get, it is easy to lose your sense of proportion over the overall design of the page as you only ever see around a third of it at any one time.

This is also a problem with VizaWrite's chief contender at the moment, ProWrite. I am not going to play one program against the other because while superficially similar in their implementation, there are enough differences to warrant any prospective user weighing their needs against what is on offer.

But I will say that at present, VizaWrite can only accommodate graphics in two colours — boring black and white. And even then there is no attempt to gray-scale an imported coloured image. You either get solid black or solid white. The aspect ratio is also bizarre — a globe from Deluxe Paint turned out like an egg when used in VizaWrite!

ProWrite works in multi-colours. But as one of the vast majority of humble monochrome dot-matrix printer owners, colour is a luxury I can afford to be without.

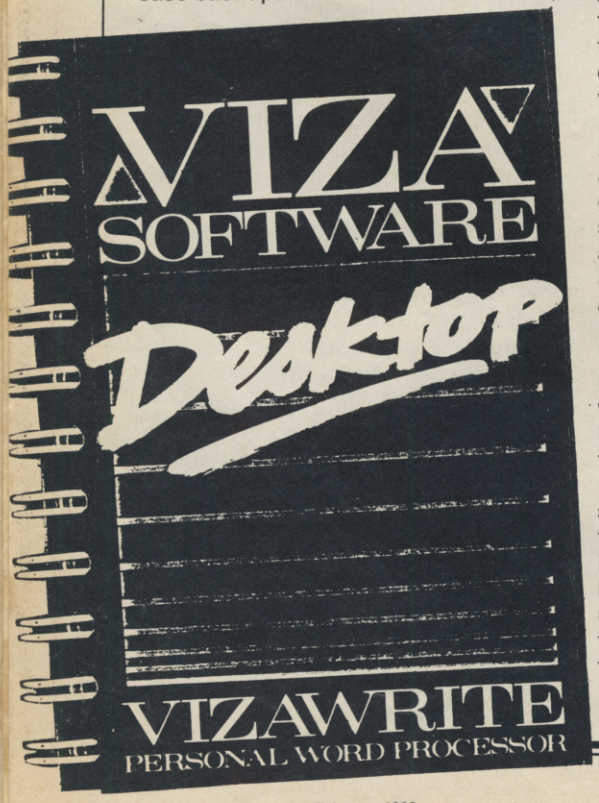
And in any event, VizaWrite boasts a very clever and useful re-sizing tool which will manipulate graphics; you can stretch images or shrink them to fill the allotted space, which makes up for the program's grievous oversight — the inability to flow text around a graphic.

When you import an image into VizaWrite, no matter how small it is, you cannot enter text anywhere else on the lines taken up by the graphic; so if you need something like a letterhead or an explanatory note next to a drawing, you

A full range of pull-down menus is available by using the mouse, and without exception requestor boxes for option choices are extremely well-designed and foolproof

have to write it while you're in the art package you're using. Not friendly, and something I am assured will be put right shortly.

But the beauty of VizaWrite is its ease of use; if you are the type who will only



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JUMPDISK - 1987

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CONTINUED FROM PAGE 118

look at the manual as the last possible option, then have no fear — this program's built for simplicity. The major feature which will need referring to is the powerful Mail Merge, but even after a single reading this becomes second nature.

A full range of pull-down menus is available by using the mouse, and without exception requestor boxes for option choices are extremely well-designed and foolproof. There are also many shortcuts accessed through keyboard commands.

Cutting, copying, moving and pasting text is as straightforward as in any word-processor, only in VizaWrite you are manipulating text of varying fonts; should you need to amend or edit a particular portion, the correct font is automatically selected regardless of what you were using last.

Ruler settings are easily changed, with a neat trick for incorporating Tab stops; Tab settings are indicated by red triangular markers, which can be moved freely with the mouse, discarded by moving them off the ruler, or added by picking up a marker from a sort of Tab store and installing it on the ruler.

Margins are similarly edited, though for some reason measurements are indicated in inches; as a rule people use metric these days!

Any text under a ruler falls into place once any amendments are made to margins or lay-out format; and multiple rulers are allowed for configuring text differently in different parts of a docu-

You can easily change the style of text in any portion of your document by marking it and changing an option

ment. You can choose to have your rulers visible throughout the document, or more usually chose the 'Hide ruler' option from the edit menu. There is also a method of fine-tuning the margin by inputting inches and fractions.

Similarly, Tab settings can be tailored to your needs, with the option to align them left, right or centred, with precisely measured positioning possible.

Because of the way the program works, text can only be inserted, and not overwritten.

VizaWrite supports plain, bold and italic faces of any font (with a rider that the maximum character size is 255 pixels by 255), as well as underline, superscript and subscript — anywhere in the document, which means multiple fonts can be used on one line.

And what's more you can easily change the style of text in any portion of your document by marking it and changing an option — from light to bold, or italic perhaps.

Parameters for specifying page breaks are edited from a set-up menu, but you can force a new page at any time, and you can easily skip to specific pages in a long document without having to scroll laboriously through the entire text.

Search and replace options are implemented, with the ability to specify replacing all occurrences of a word or string, changing selectively, or simply finding the next occurrence. You can also stipulate a case-sensitive search.

File management is competently handled with helpful information available from a History feature. It is here you can protect work with a password as well as see the file's vital statistics — things such as the date and time of creation, a file note for information, number of words and free space available. You can also define the cursor style from this menu, allowing slow, regular, fast or no-flash operation.

As mentioned earlier, a desktop publishing program needs more than fancy fonts, it needs to be able to display illustrations, and VizaWrite accomplishes this elegantly and simply; you select the graphic to load into a document (perhaps from a Deluxe Paint brush or full-screen) and the artwork is inserted at the cursor position, pushing existing text downwards.

In just the same way as blocks of text can be moved or cut once loaded, graphics can be placed anywhere within the document, as well as being re-sized.

Changing the size of a drawing has its disadvantages though, in uneven pixel changes which can sometimes mean the object looking totally different from what you wanted! It would have been useful if a proportional sizing option had been incorporated to allow a uniform increase in size (ie increase the size horizontally by the same proportion as vertically).

Using VizaWrite to send the same letter to many people is handled by the Mail Merge facility, which is one of the simplest I have ever come across; there are no field names or numbers to clutter up your page or mind, because data is accessed sequentially.

You need to create a data file to contain the information you intend merging — name, address and so on, in the order you intend inserting it in the document.

And to upload it at the time of print-out, you simply type in the characters <> as indentifiers; so if the first thing in your data was Fred Fish, that's what would be inserted by the program the first time it came across <> in your text — and so on for as many fields as you like. The other side of this coin is that if you want to refer to Fred Fish later on in the letter, you have to write his name in that position in the data file — you can't make reference back to the earlier field.

VizaWrite maintains a Glossary where you can store various bits and pieces you'll need again in futre documents; in

The printer set-up allows high quality output or draft, and you can simply print the document in normal 80 column output without any of the fonts being used

reality this is simply a clipboard file for text and graphics — things such as your address or logo, to be recalled from disk as the need arises.

But the option's usefulness increases when you realise you can group items together in separate glossaries to be used for different purposes, making document management more streamlined. If the glossary item is text, a small window will show you what the first few lines say.

The printer set-up allows high quality output or draft, and you can simply print the document in normal 80 column output without any of the fonts being used; but this will destroy the what you see is what you get beauty of the program, with line-breaks at unexpected places.

The manual is well-illustrated and its clarity is superior to many I have seen for word-processing packages. There is an abundance of help, including a dictionary of terms (for instance: CLICK — To press and release a mouse button) and a thorough but scrappy-looking index.

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Conclusion

Many applications spring to mind to take advantage of this program — business presentations, advertising, newsletters — but even these serious uses cannot hide the sheer joy of being able to create good-lookin layouts. VizaWrite is simplicity itself to use and produces the goods. But it will still stand comparison with rival ProWrite (check out the review in September Amiga User) as it all depends on your needs as to which you would spend you cash on. Some of the shortcomings I have highlighted should be rectified in any upgrades, so while these opinions hold good for version 1.03, it may well be that VizaWrite could get even better.

P.L.

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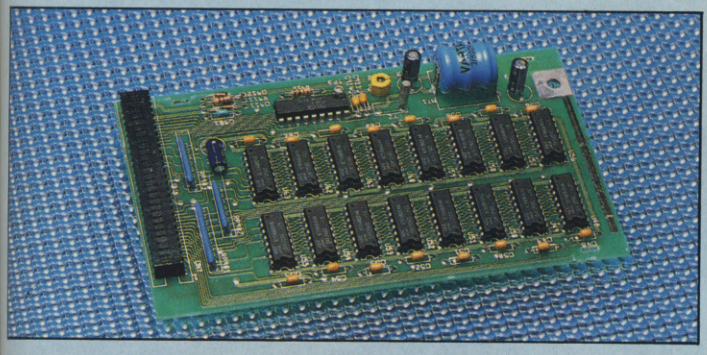

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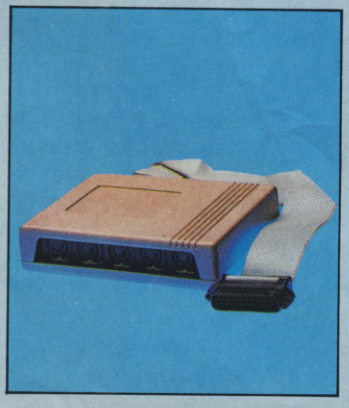

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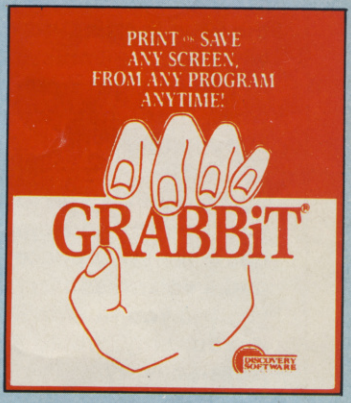

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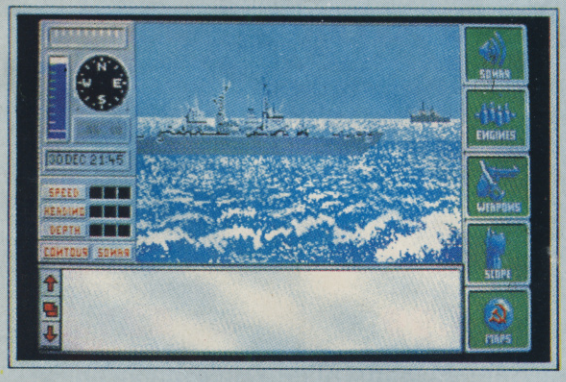
THE HUNT FOR RED OCTOBER

Grand Slam

Just about the time of the first world war, when the Russians were somewhat loosely joined to the Germans to be officially at war with the Allies, a sudden rumour swept Britain. The Russians had arrived in the north of the British Isles! How they had come or what they were there for, no-one really knew. So convinced were many people that this mythical invasion had taken place that they swore they had seen the Russians. How did they know that they were Russians? Because they had snow on their boots!

It sometimes seems that computer games designers are still living in those days or the time in the 1950's when the Cold War was at its height and the Russians had become the personification of evil. If it is not aliens from outer space who want to take over our polluted planet, it is the Russians who want to destroy the Free World. And, of course, if you are a Russian, what you want most of all is to escape; to defect to the forces of Light from the sad lands of Darkness. So what more natural than if you are a submarine commander in the Russian Navy and have under your control the very latest submarine wth all the top secret equipment for you to want above all things to desert your country and family renounce the nationality that has given you a successful career — and will probably make you an admiral if you play your cards right. Oh yes and you wouldn't let a little matter of murder stand in your way, would you? Or the fact that the whole Russian Navy will set out to sink you on sight...



Well, that pretty unlikely scenario is what you have to accept in The Hunt for Red October. It was a very successful novel and interestingly the copyright is still held by the United States Naval Institute — so the U.S. Government must have found it a useful bit of propaganda to sponsor.

Argus now called Grand Slam and under new ownership who created the computer game — got into the Russian spirit of the thing by reversing a few N's to give the titles a look of the Russian Cyrillic alphabet. That and the unlikely scenario might deceive a few simpleminded computer players but what The Hunt for Red October really comes down to is a rather well put together submarine simulation with a strong tension-inducing hunting or rather being hunted element.

Your task is to steer your way from up near the Arctic Circle down to a rendezvous with the U.S. Fleet off the eastern USA so you can live happily ever after in the land of endless Coca-cola and Big Macs. No easy task though when you have to watch out for difficult seas, natural hazards and most of all for the Russian Fleet that is most inconsiderately annoyed at the idea that you have murdered one of your officers who didn't like the Coca-cola idea and that you might be presenting the Americans with all the latest Soviet submarine technology. Unsympathetic lot, aren't they? One of the best things about this game is the range of activities that you have to control while making your way from Commie slavery. In addition to the depth, you have to steer by changing the heading — sometime very rapidly when under attack,control your sonar — to discover where possible attackers may be — and your periscope, there is a night scope too; your engines and when you are driven to defending yourself, your torpedoes.

There is always plenty to do in the game as you have to keep a sharp look out for attackers who seem to appear out of nowhere. However, one excellent option you have when your concentration begins to lapse is to save the game to disk and start again from the place you left off when you have refreshed yourself — probably on vodka and caviar. This is a very useful option because this whole simulation works itself up into a very difficult game indeed. And after a while you get a genuinely hunted feeling, the sense that danger really does lurk out there everywhere, waiting to destroy you and that the world's hand or rather its guns and depth charges and mines are turned against you and only your determination and alertness can save you from a freezing watery grave.

The Hunt for Red October comes fully equipped with a number of extras including a Command Manual which though simply written and easy to understand is 37 pages long. The package even includes a Crew badge and a poster for you to stick up on your wall for added reality.

If you can get the submarine through to the haven of American hospitality, you will certainly feel highly delighted with yourself. Because it is truly an extremely hard task. If you do, I believe it will take you many hours and even then if you try a second time you will never be able to follow the same route — indeed you may deliberately vary it — and you have a whole new submarine game to play. So there is high value here, if that's what you want. How do I know this? Because even after a considerable time I still have not yet successfully completed the voyage and I shall have to keep going back until I do. Any game that can make you say that has some special magnetic magic about it. My view is that The Hunt for Red October will certainly be judged as one of the best games to come out on the Amiga so far. But could we give the Orwellian over simplification "Four legs good, two legs bad" — "Western Angel, Russian Devil" myth a rest or even a quiet burial at sea?

Z.M.S.

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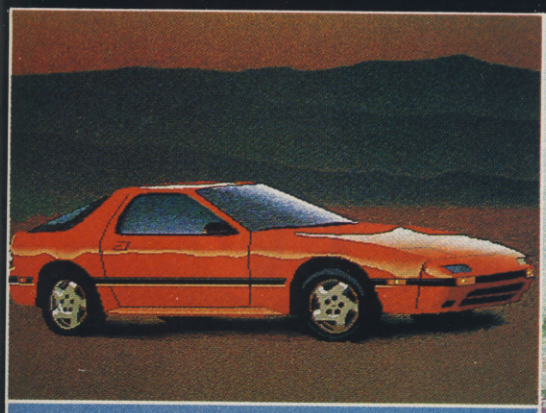

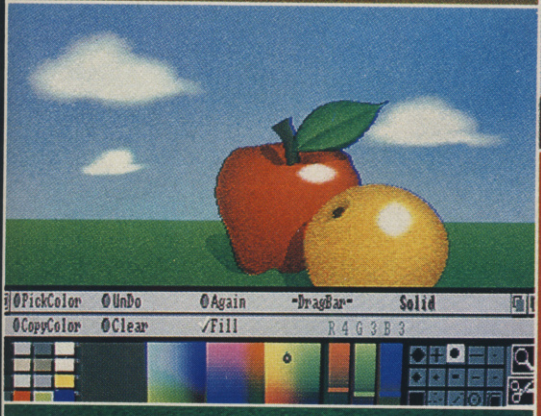

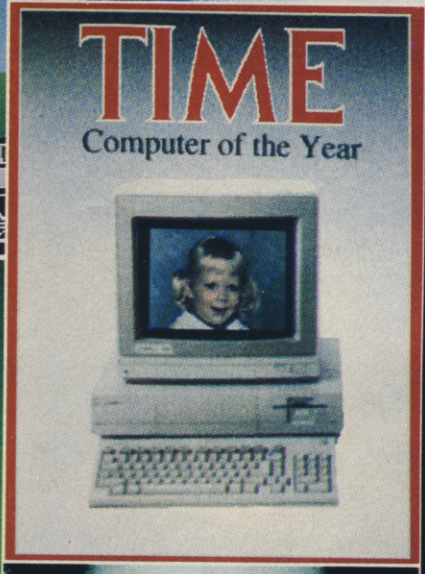

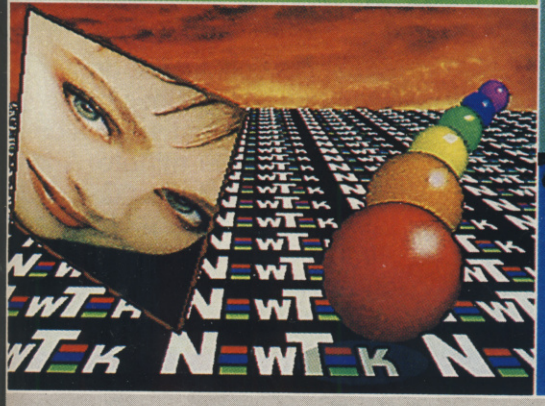

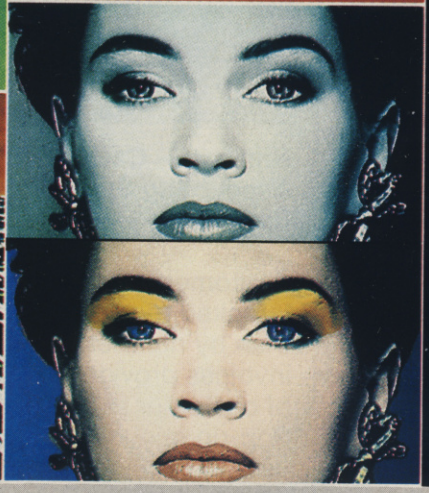

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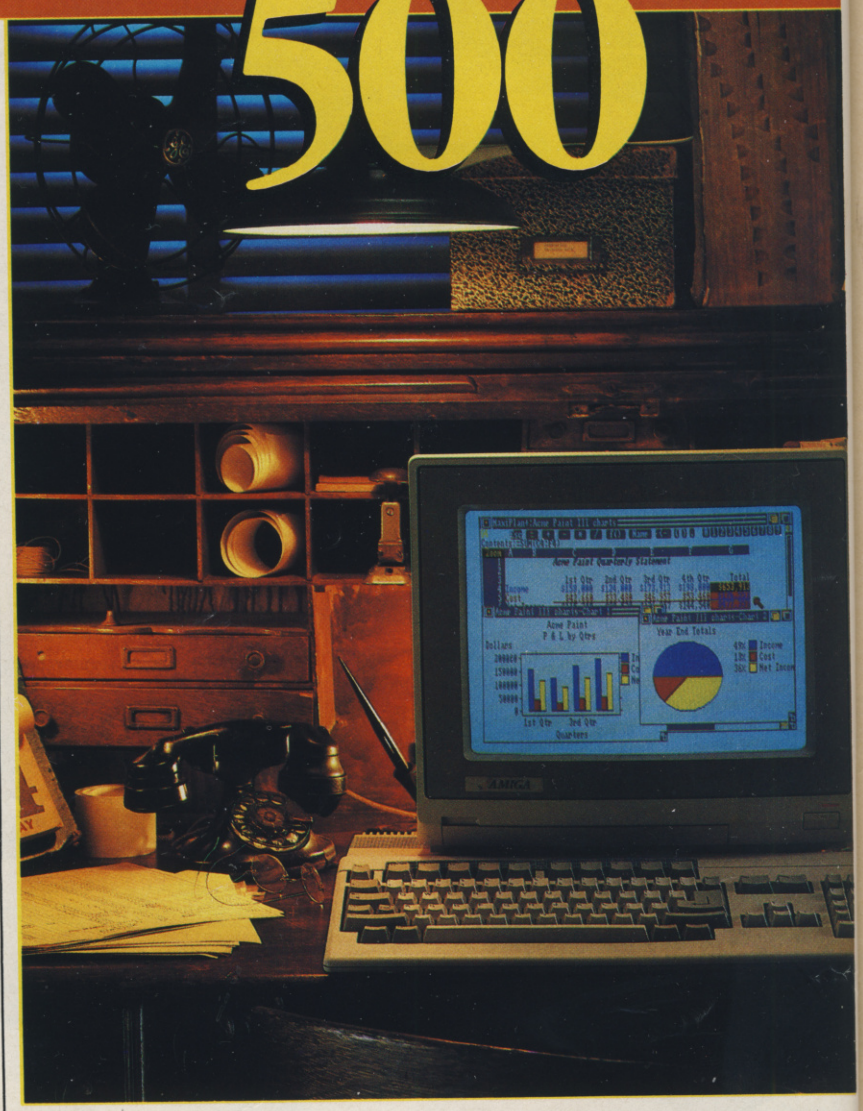

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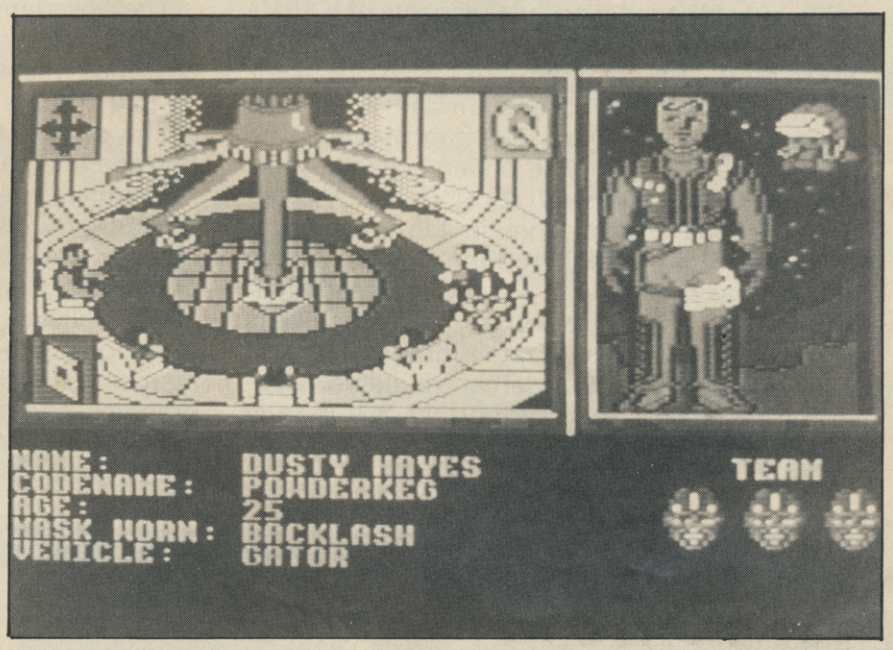
THAI BOXING

Anco

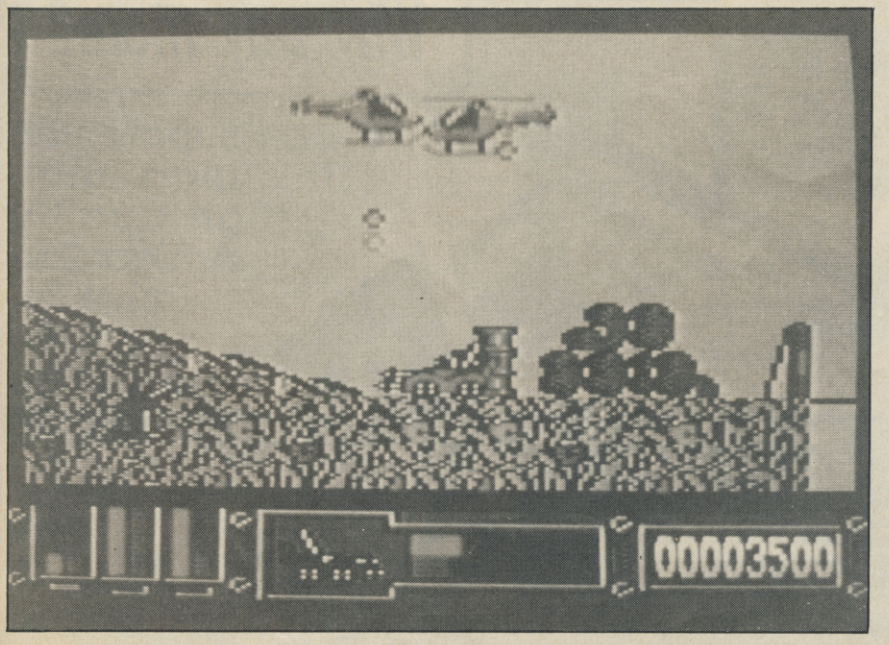
Doing their bit to lower the price of Amiga games, Anco have decided to release another martial arts game, not karate this time, but what is commonly thought of as the toughest martial art of them all. Thai Boxing, where I believe one boxer a month is fatally injured . . .

A neat loading screen and a snippet of oriental music give way to a not so impressive title screen. From here, the mode of play is selected, either one or two players, and three initials are entered for each player.

The fighting starts in the familiar way, with two boxers facing each other, viewed from the side. An energy bar and a picture of the fighter's face is shown at the top of the screen for each player. When a hit is landed, the fighters faces start to bleed. From a little nose bleed, the faces get pulverised into bloody messes, not a sight for the faint-hearted. Fifteen moves are accessible from different positions of the joystick with and without the button pressed. Anyone familiar with any other karate game will know all the types of kicks and punches to expect, high ones, low ones, spinning ones, they're all there.



Unfortunately, the design of the sprites has not had sufficient thought given for they look more clumsy than the Amiga requires, and their animation, when compared to Masterironic's Ninja Mission, they are clearly less believable. They have too unrealistic a movement, and seem to move more like robots. However, the backgrounds are of excellent quality.



At random points in the game, the view changes from side on, to a slightly 3D look. This does add some variation to the Thai Boxing, but the sprites seen even less realistic in this part. A sweep kick looks more like a low headbut! Player one usually starts on the left of the screen, but again, at random intervals, starts on the right. For some reason, when this happens, the fight controls remain the same, but pushing left makes him walk right and vice versa.

Sampled grunts, screams and smacks sound off throughout the game, but these are badly timed, and the sound of a kick in the face is heard some time after.

These days, beat 'em ups should realy achieve a better standard than this, especially on the Amiga. Thai Boxing can offer some entertainment, and it is cheap, but it is not going to be an international smash hit until the sprite movement equals the background quality.

B.V

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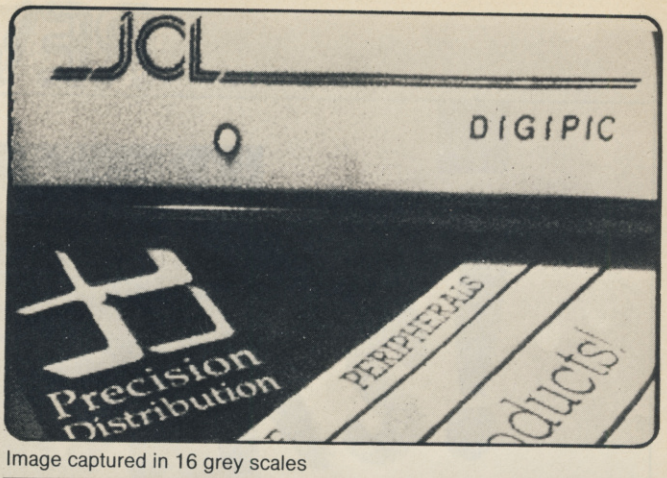

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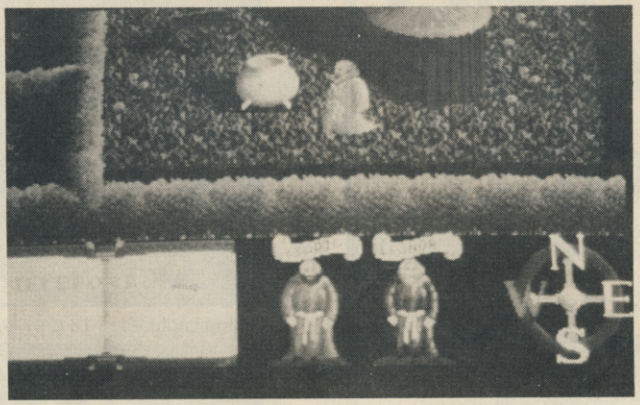

Feud is one of Mastertronics most successful games. Now released onto 16 bit Amiga, Andy Moss tries a 16 bit of Wizardry in the garden

I never was much good at gardening. I don't know, put me in a plot of plants and I couldn't tell a geranium from a gerbil. I suppose if you haven't got green fingers, you shouldn't bother. Now let's just say you are a wizard, and that wizardry is the way you make your living. To be any good at it, you need to have an odd spell or two in your book (after all what good is a wiz with no spells, it's like playing a guitar with no strings!) You can make most spells by mixing certain herbs together in your special cauldron from a recipe in the Old Book (a sort of magic users Delia Smith edition) but the problem is finding the blessed things. Herbs just cannot be grown by any old bod, you need skill. So to be a good wizard you need to be a good gardener. Unfortunately, in FEUD you're not. There is this rival wizard, who fancies himself as the local Merlin, and is naturally out to get you. What you have to do is run around the place visiting other peoples gardens and pinching their herbs. When you have collected the necessary amount for your spell you need to rush back, mix them in your cauldron to make the spells that will do it to him before he does it to you.

I first saw this game on the 64 last year, and it really was very well put together. The Amiga version is just as pretty, with a mixture of terrain from woodland to huts to rivers to mazes and the townsfolk who amble along the road just waiting for you to turn them into zombies so they can huntout your adversary Leanoric for you.

The main criticism I have, is that the game doesn't use the Amigas excellent scrolling facility, it just jumps from frame to frame, not very satisfactory. There is a distinct lack of sound, apart from the excellent loading screen, and not enough action takes place in between your bouts with Leanoric. A very simple game, yet addictive in parts, but what I hear you ask is the point of it all? Well two points really, one is that you get to be he who must be obeyed if you win, and the other is that you get a crash course on becoming a better gardener!

A.M.

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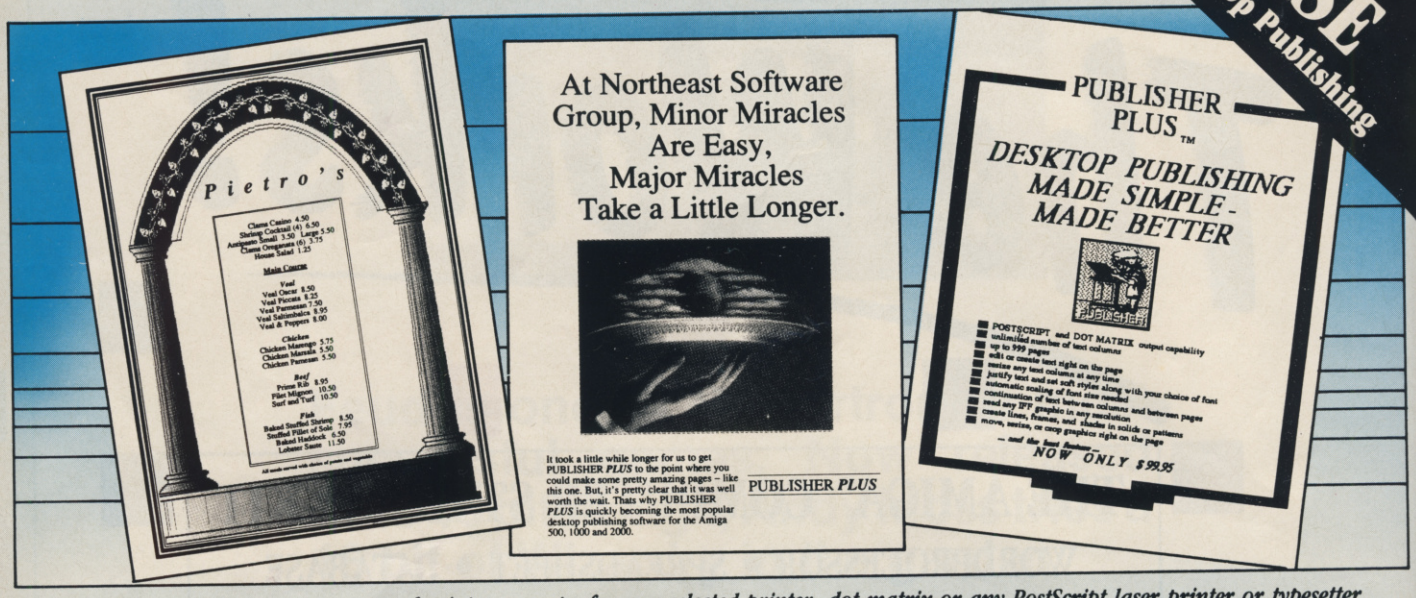

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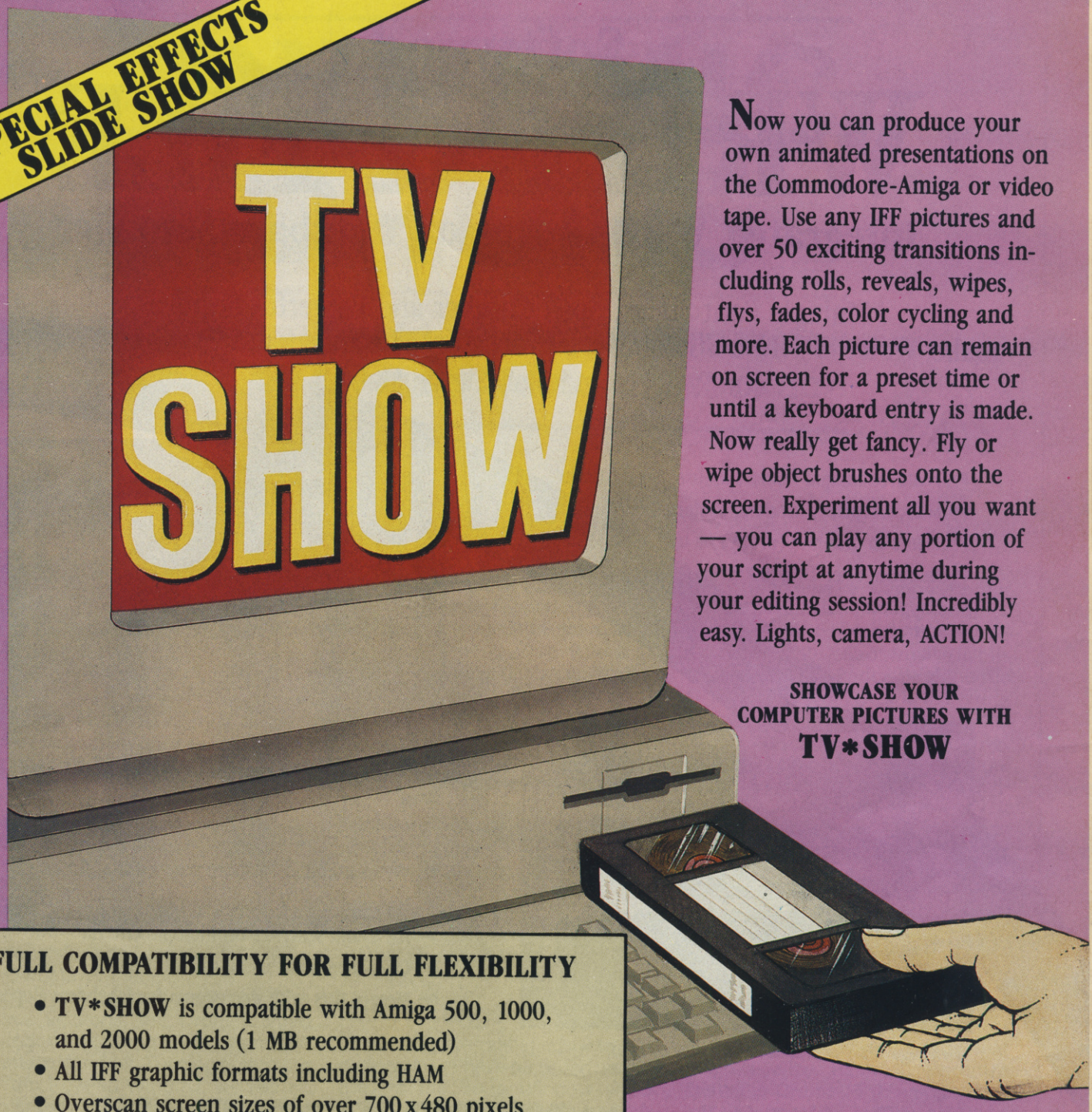

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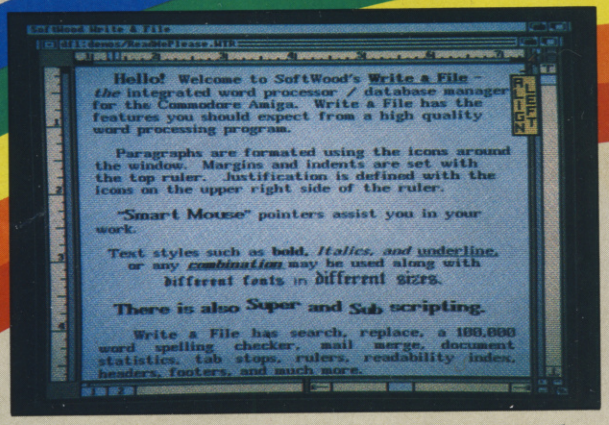

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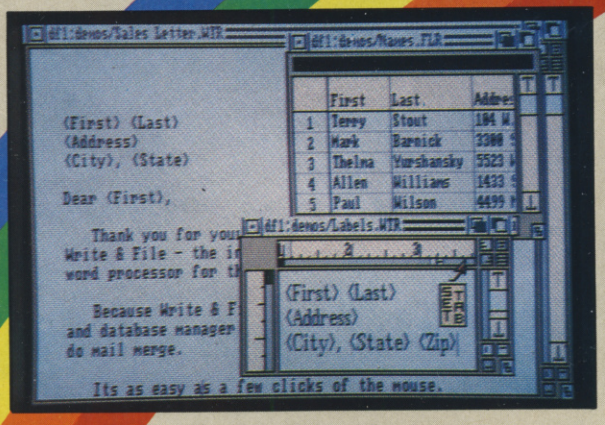

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DYNAMIC DRUMS

Giulio Zicchi beats the drum for a new Amiga percussion package

Dynamic Drums will turn your Amiga into a professional drum machine. Or so New Wave Software would have us believe in the manual accompanying this package.

Well, I can't quite see Phil Collins using it to write his next album but for the rest of us it comes pretty close. Dynamic Drums arrives on three disks and with a short (ten page) manual. Double clicking on the icon from Workbench gets us up and running, presenting us with the main screen and a requester to load a sample drum kit. Quite a choice to be had here, ranging from rock, through funk and even a NeoCountry kit, whatever that is!

The main screen is divided into three sections; the Drum Keypad Window, the Song Window and the Pattern Window. Turning first to the Drum Keypad Window, we see an enlarged representation of the Amiga numeric keypad with a different sampled sound assigned to each key. At this stage the manual advises us to 'press the keys and play the drums'.

Having tried out the various sounds manually we have the option to start entering patterns into the pattern memory or loading one of the many demonstration patterns supplied on disk.

Dynamic Drums is capable of storing up to ten patterns at a time in a memory and combining them to make a complete song. Entering notes is as easy as presing pressing a function key to start Record mode and playing along in real time to the metronome beat. If your ability isn't up to this then a quantize function is provided for error correction. Alternatively, you can enter the individual beats in the pattern window using the mouse, although I found this a frustrating experience due to the miniature size of the dots in the graphic display window.

Time signature, quantize and tempo functions are all easily changed with a simple click on the left mouse button or a press of the relevant function key.

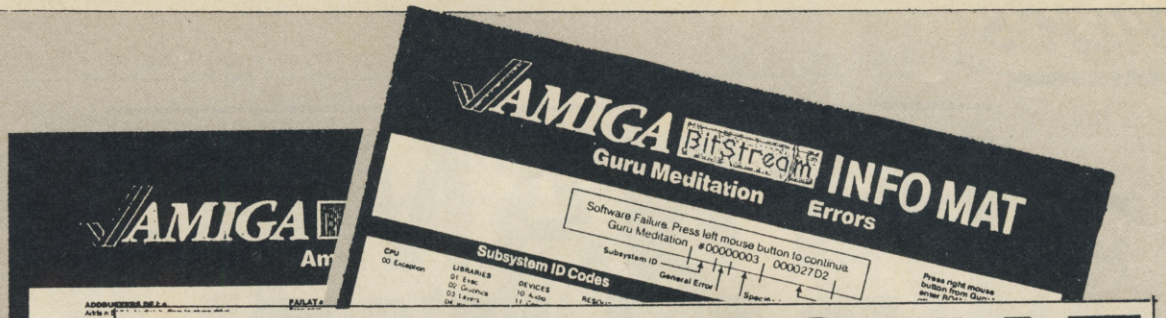
Macro songs

Once we are satisfied with the pattern(s) we have recorded we can turn to the Song Window which allows us to combine the patterns together. Using a handy form of shorthand enables us to create quite lengthy songs, e.g. entering 3a4b in the song window would play patter 'A' three times followed by pattern 'B' played four times. A nice touch is the implementation of 'macro songs' labelled X, Y and Z. Entering the example above in any of the macro boxes and then entering 'X' in the main song box will cause a 'subroutine' jump to the relevant pattern combination. Handy for repetitive sections.

Okay then, we've composed our patterns and combined them to make our song but we'd like the hihat to be a little less obtrusive in this particular song. Hidden behind the Drum Keypad Window is the Drum Control Window. A click on the depth gadget reveals it and allows us to change the relevant volume and tuning settings of each individual sample currently in memory. It is also possible to assign the sounds to any of the four sound channels of the Amiga.

My only complaint about what is otherwise an excellent package is the so-called Midi implementation. Given the scope of MIDI and its capabilities I was disappointed to find that the only concession made was the ability to turn MIDI on or MIDI off. The manual explains that this will allow us to synchronize Dynamic Drums to the clock from an external device such as a sequencer or drum machine but doesn't even tell us which device number we are or how the samples will be triggered — a regrettable shortcoming. This aside, Dynamic Drums is a very nice package indeed, due in no small part to the quality and quantity of the samples provided on disk and the comprehensive control the user is given over those sounds. A compulsory addition to anybody's software collection.

G.Z.



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Adventure

COMMENT

It is with festive greetings and a full stomach from too much turkey that I welcome you to this months Section, which is one year old this month. Tradition calls it that we sit and ponder at this time of the year, and look back over the months at the various adventure games released that were much heralded by some, quietly slipped in by others and delayed indefinitely by a few. It was for instance only twelve months ago that Ariolasoft were going strong with **HEART OF AFRICA** and **THE BARD'S TALE**, two quite stunning games, then there was Activision really getting it together and giving us **TASS TIMES IN TONE TOWN**, which in fact was awarded CCI's own Oskar, not forgetting **PORTAL** and **LABYRINTH**. **KNIGHT ORC** was first mooted as an imminent release, but subsequently delayed, and **PHANTASIE II** and **ALTERNATE REALITY** weighed in from US GOLD. Not to be out dungeoned so to speak, Origin, care of Microprose, gave us the wonderful **ULTIMA IV** and Anita (Mag Scrolls) Sinclair created **GUILD OF THIEVES**. Infocom released no fewer than **EIGHT** adventures and word has it that another **EIGHT** are to follow in 88, Scott Adams finally went bust (I for one will not mourn his passing) and Infogames delivered one or two real masterprices, in the form of the **VERA CRUZ/SIDNEY AFFAIRS**. CRL decided really to go for the censor in a big way graphically and came out with **FRANKENSTEIN** and **DRACULA** and lately **JACK THE RIPPER**. It all added up to quite an eventful year adventure — wise and, just to add some of my own backslapping, I am proud to have been of help to so many of your stuck in those horrendous puzzles that have left many of you burning the midnight oil in fustration.

Out of all of them, for me **LEGACY OF THE ANICENTS** was the best role player and Infocoms **HOLLYWOOD HIJINX** the best text adventure only because the plots for both were so original and fresh, that they stood out magnificently and fully deserved CCI's Oskars.

Onto this month then, and there is the last map in the **ZORK** series for you along with a hefty slice of its solution, and a bunch of new role players from SSI, and a budget game from Mastertronic, **RIGELS REVENGE**.

MAILBAG

Dear Andy,
I and a colleague have written a comedy adventure and we are trying to market it. The challenge we have is that so far all the companies that we have written to have refused to even look at it. I think this is because we need the Quill to write it and there is obviously a lot of junk out there! Despite our games old fashioned verb/noun input it has intelligent responses and interesting descriptions. Can you help us with a review?
Kevin Bryan Charlton

I suggest you give Gilsoft a ring, as they sometimes market adventures written on the Quill that are exceptional. I cannot comment on how good or bad your game is because you haven't sent in a copy. If you do, I will be only too happy to review it. As to your comment on "A load of junk out there" I assume you mean other people's attempts at writing adventures. Well, personally I have seen some pretty good programs that have been sent in, and now that the Quill has been updated the chances of even better games written on the system grows each day. It's a little unfair to criticise in that way, remember Delta 4 etc. Fergus Quills everything.

Dear Andy,
Thank you very much for your tips on ZORK I. To show my appreciation I have enclosed some tips of my own from my favourite Infocom adventures (see hint section AM) but I require your invaluable help once more. (Oh no, I hear you groan!). Please could you help me with the following problems; **STARCROSS**, how do I get the yellow rod to insert into the machine to switch the lights on? Where is the silver rod? **ZORK II** How do I kill the lizard in the guard room, what is the machine for in the machine room. **DEADLINE** how you solve it? I know these problems will present no difficulties to a super person such as yourself, but to me, they are a matter of life or death. I look forward to your answers.
Jonathan Dale Derbyshire

At last! Someone who appreciates me. Thanks, Jonathan for your tips which I have put in the HELP section, I am always happy for readers to

Adventure!

send in tips, the more the merrier; we will beat those puzzle makers in the end. In Starcross go to repair room and insert yellow rod. The silver rod is in the gun west of the melted spot. The lizard in Zork II needs to be given the box of insects found at the bottom of the pool, the machine room is important for stopping the carousel and releasing the rusty box by playing with the buttons. The only hint I will give you for Deadline is that you need to be in the library at a certain time hiding on the balcony in order to see a certain young person go into a secret room behind the bookshelf! Let me know how you get on.

ADVENTURE NEWS

PSS TO RELEASE SORCERER LORD
Sorcerer Lord is a solo fantasy wargame simulating the invasion of the acient lands of Galanor by the evil ruler of the Northern Shadowlands. This strategy game, which inlcudes magic and sorcery is priced at £12.95. As this company had quite a hit with Swords and Sorcery last year I have high hopes.

MAGNETIC SCROLLS PLAN 2 MORE
Following Jinxter which has yet to be reviewed in this hallowed section, Mag Scrolls have ASSASIN in the pipeline, which is set in 20th century London, also rumour has it that UPON WESTMINSTER BRIDGE the adventure that was planned last year, will be released November 88.

CRL CONTINUE HORROR THEME
It seems that CRL have an urge to keep the censor busy, as they are planning some more horrific adventures. Rod Pike, the author of Dracula and Frankenstein is working on THE WOLF MAN, and DR JEKYLL and MR HYDE is also on the cards. Meanwhile at the Jack the Ripper pub in London, CRL officially launched the Jack the Ripper adventure. As this is a subject very close to my heart. (I researched old Jack very thoroughly for a project and came up with a probable culprit!) I am looking forward to seeing the game.

DEMON STALKER FROM ELECTRONIC ARTS
Soon to be with us is Demon Stalker, a 99 dungeon D & D game with monsters and magic, scrolls and keys, food and chests. Sounds like another Gauntlet to me.

STRATEGY GAMES FROM ELEC ARTS AND HEWSON
Electronic Arts are releasing APOLLO 18, which is an actual simulation of the Apollo moon flight from start to finish. You must perform all the critical phases of the mission including a space walk, stage jettison and a successful splash down. Cassette and Disc at £9.95 and £14.95 respectfully.

ADVENTURE REVIEWS

THE ETERNAL DAGGER
SSI £24.95
They should have renamed this the Eternal Wait as never have I played a role player that is so slow. It is disgraceful. Before play commences, you have to copy not one, but TWO disks and that my friends takes 45 minutes!

OK we laboriously copy the disks and then joyfully we load up the game proper, excited in anticipation that the last 45 minutes were well spent setting up a super game. A mistake. The Eternal Dagger is a huge disappointment for me, the graphics are poor, the gameplay is archaic which is scandalous as the copyright dates it as an 1987 release, and the disk access is so slow it's almost terminal.

This is a sequel to THE WIZARDS CROWN and I remember hating that one for the same reasons, so the authors haven't changed the system at all. You can transfer characters from CROWN or generate new ones to defeat the invaders from the Demon World.

The story is that hordes of monsters from the Demon World have crossed into Middle World through a large Portal which can only be sealed by the Eternal Dagger, which has been lost.

When you compare the playing system to say the Phantasie series, there is no comparison. In my opinion a role player will always work as long as you do not spend at eternity waiting for the disk drive to chug over. If some guys can do it why not others? Sorry Paul Murray, not my cup of tea. Personal Rating...2

Adventure!

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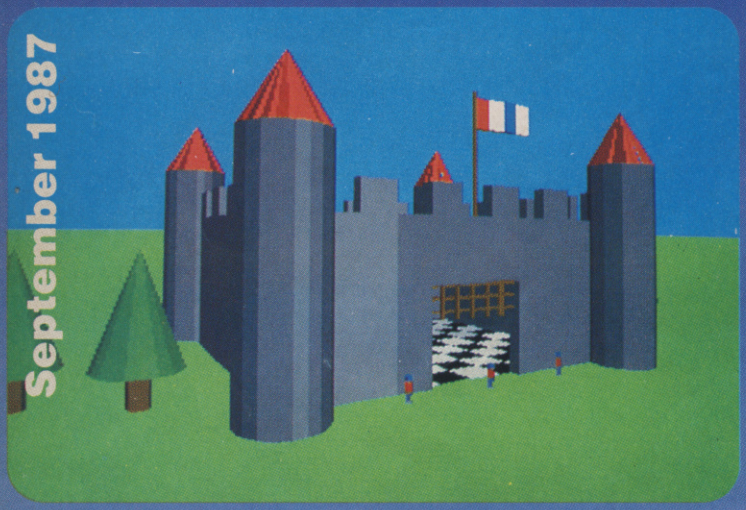

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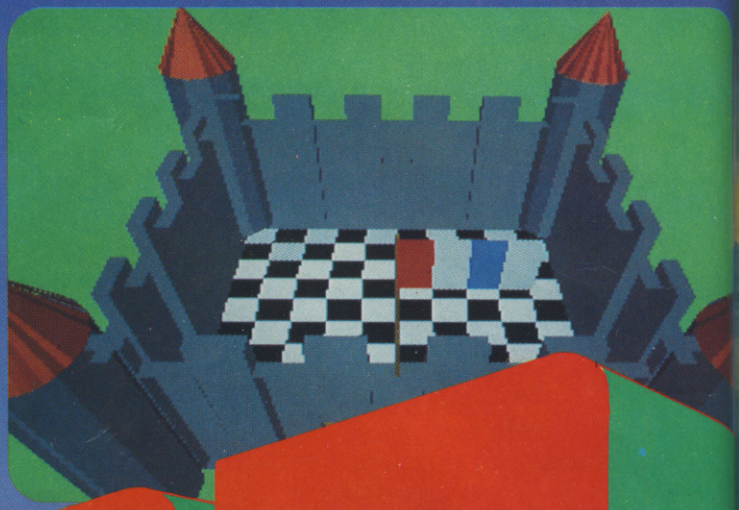

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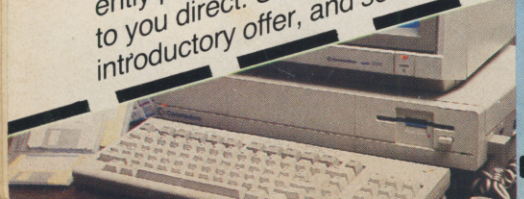

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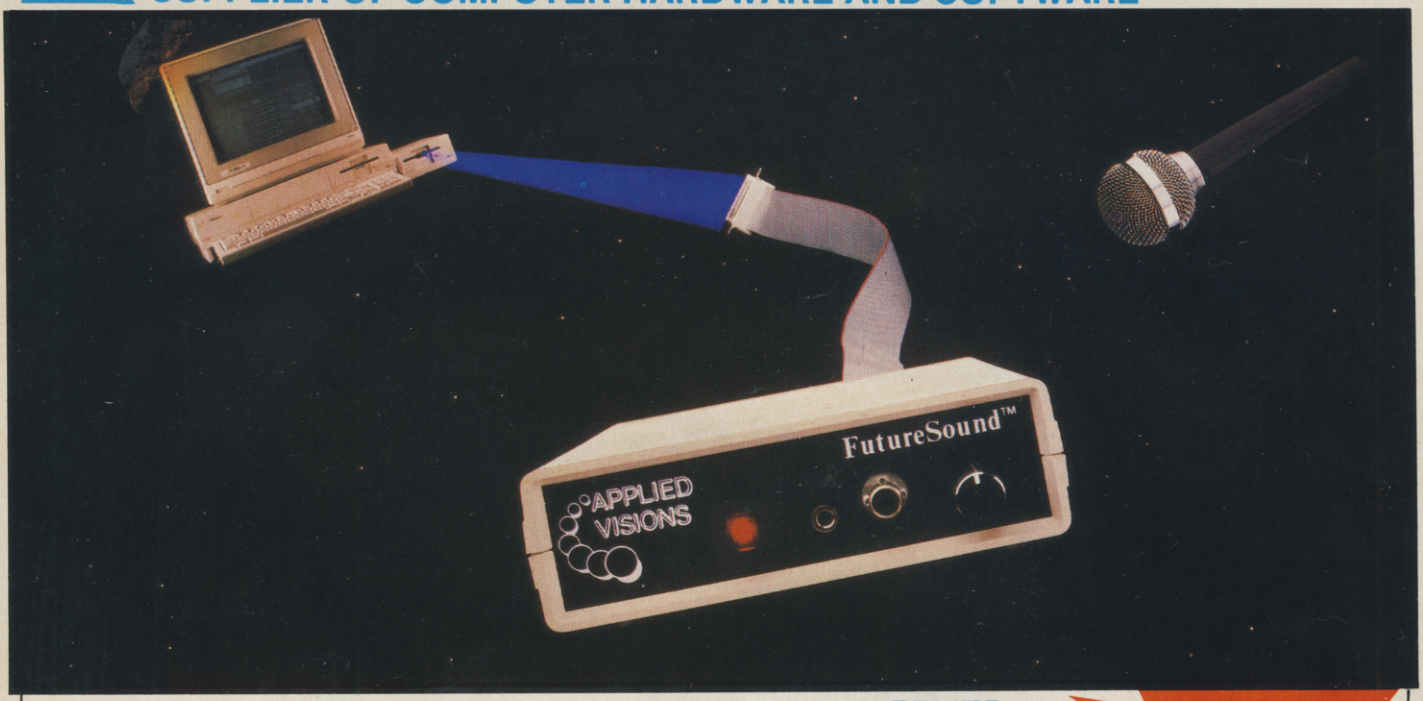

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DELUXE NEWS MAY 1987
QUOTE
The OPEN THE POD BAY DOORS HAL Line that appears on the Deluxe Video demo disk was actually one of the very first recordings ever made using Futuresound.
Futuresound the premier audio digitizer for the Amiga.

CCI JANUARY 1987
QUOTE
A sound created with Futuresound and saved in IFF could be read into INSTANT MUSIC or DELUXE MUSIC for further manipulation.
Using Futuresound is simply a matter of making certain that everything is properly connected and then loading the software.
If Deluxe Paint made you look, then Futuresound will make you listen.

YOUR AMIGA JULY 1987
QUOTE
Futuresound is a professionally presented product, from the solidly built hardware to the neat manual with large type and clear diagrams. If your hobby stretches to £175, or sound sampling is something you need to achieve on the Amiga, then I am unaware of a better way of performing it.
By Anne Owen

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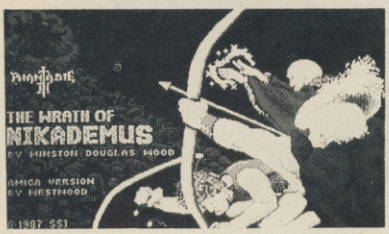


PHANTASIE III
SSI £24.95
Now we are talking about a really great game. Full of blood and thunder, a spell binding storyline with many improvements to the already successful game design.

Bows and arrows have been introduced, more potent spells have been created, you can determine which skill an individual character should improve on as he gains experience, and wounds are specified by body location and extent of injury. The graphics have been enhanced on the original and the speed has increased. All this goes into making Phantasie III a terrific game to get into.

This time you have at last to come face to face with Nikademus the Demon Lord who is intent on not just ruling the Island of Gelnor but the entire world. In order to get to this final confrontation, your party must travel the astral planes where you will meet some of the most powerful beings that inhabit the Phantasie universe, including the infamous Lord Wood. From these encounters you gain the knowledge and the power to defeat old Nik. The thing I like about all the Phantasie releases is that they really are adventures in the truest sense. The dungeon text descriptions are very atmospheric, and the battles are realistic in their treatment.

If you have never played a Phantasie game, fear not as this can be played as a one off, but I think in order really to appreciate the story, you must play the other two first.

Phantasie III The Wrath of Nikademus, is a superb example to others of just how a role playing computer adventure should be.
Personal Rating...9

ROADWAR EUROPA
SSI £24.95
If I am not mistaken, Roadwar Europa is set in a similar environment to Origins' Autoduel, where men and machines combine in a deadly duel of death. Roadwar is the sequel to Roadwar 2000, where America suffered from a bio war that devastated its lands and left marauding gangs to fight it out using custom made vehicles which rammed into anything and everything.

The sequel EUROPA is set in a Europe held hostage by maniacal terrorists. They have already destroyed one city with a nuclear bomb, and threaten to detonate five more across the continent. The United Nations are close to capitulation, but agree to one last chance —send in one man thats you, to locate and disarm the bombs, find the enemys HQ and kill the terrorist leader, with the help of a hand picked crew. Once you have picked the number of vehicles you need and the amount of men, and arm them all suitably, you comb the highways and cities of Europe. Even the Vatican, fighting mutants and road gangs in order to succeed in your mission.

As a role playing idea, it certainly beats the magic and swords variety which to be truthful is a little constricting.

There is a lot of game here, and it is not just monster bashing. I came across some friendly freedom fighters who told me of their agents planted in various cities who know of the bomb locations, it's just a question of finding the agents before they are discovered.

Its all gripping stuff and thoroughly recommended.
Personal Rating...8

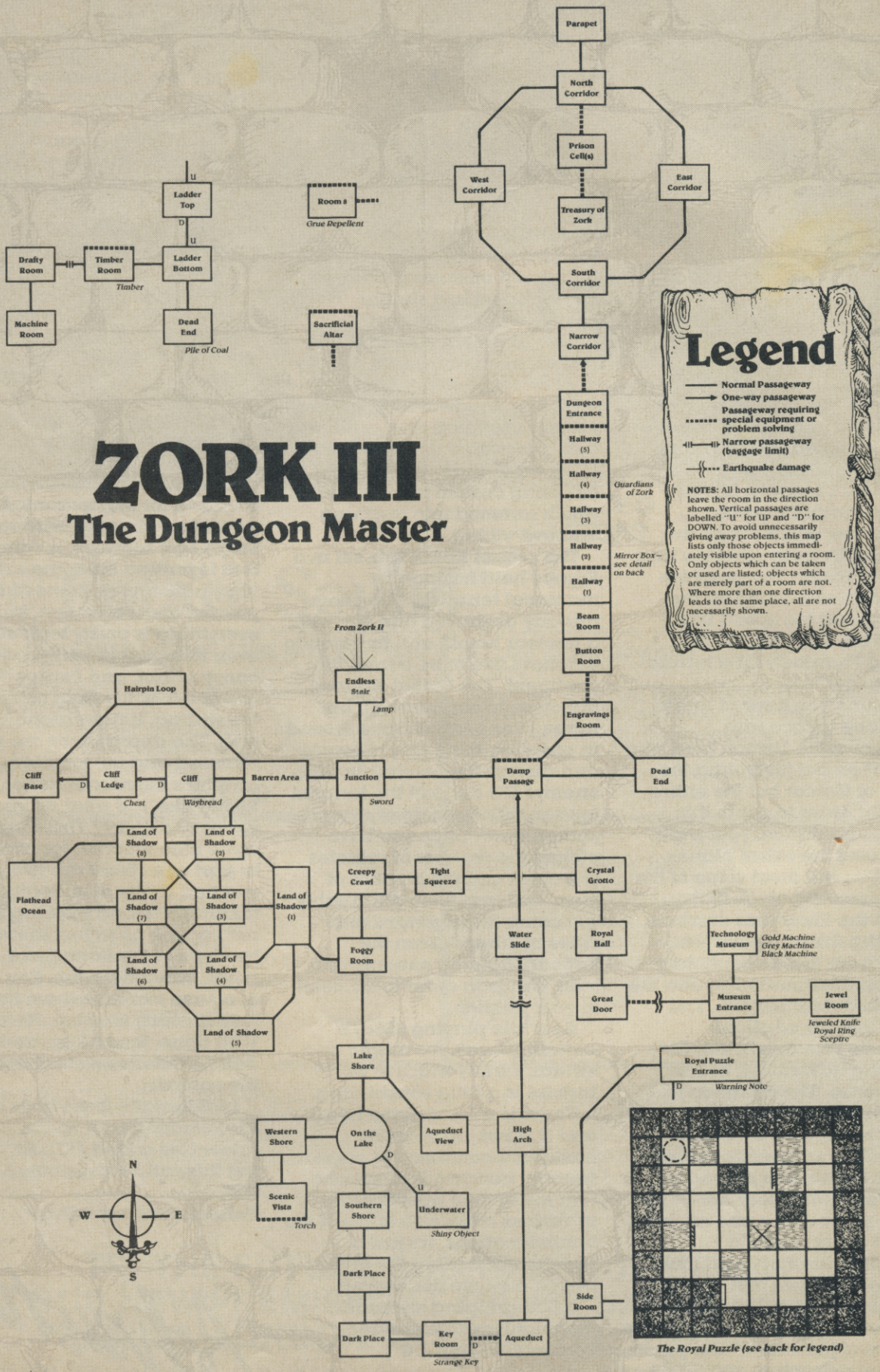
RIGELS REVENGE
MASTERTRONIC 1.99
Harper and Elliot together formed one of the great newsgathering teams of the 22nd Century. Their coverage of the Reunification war was outstanding, there was nothing they wouldn't do for a story. This led Elliot to suggest they cover the battle at Rigel V one region where the Rebels still held out against the Federation. Elliot was smuggled in disguised as a Rebel Trooper, his mission, to discover the whereabouts of a Doomsday machine the Rebels claims to have. Harper was to follow later in his true role of front line reporter.

They meet up one night in a Rigel backstreet only to run into problems... This then is the scenario for Mastertronics latest adventure cheapie, written by Smart Egg software, a company that is putting out some rather tasty adventures. Some of the puzzles are a bit mean, but everything is pretty logical, and even though it is fairly linear in construction, and I suspect the use of either the Quill or GAC in the writing, it flows along pretty well. The descriptions are well planned and the location graphics functional rather than PAWN like, but what do you expect for £1.99? There are some nice touches, for instance, in part one (there are two parts) you find a pile of uniforms; just takking one and wearing it is not enough as in fact there are two types of uniform there, one rebel, one federation. You must of course examine them first to reveal which is which. Neat uh? Well done, Smart Egg, and well done Mastertronic for buying the contract.

Incidentally these boys are also working on a space adventure called FEDERATION but this will be distributed by CRL.
Personal Rating...7

Adventure!

ZORK III
The Dungeon Master



Legend

- Normal Passageway
- One-way passageway
- Passageway requiring special equipment or problem solving
- Narrow passageway (baggage limit)
- Earthquake damage

NOTES: All horizontal passages leave the room in the direction shown. Vertical passages are labelled "U" for UP and "D" for DOWN. To avoid unnecessarily giving away problems, this map lists only those objects immediately visible upon entering a room. Only objects which can be taken or used are listed; objects which are merely part of a room are not. Where more than one direction leads to the same place, all are not necessarily shown.

The Royal Puzzle (see back for legend)

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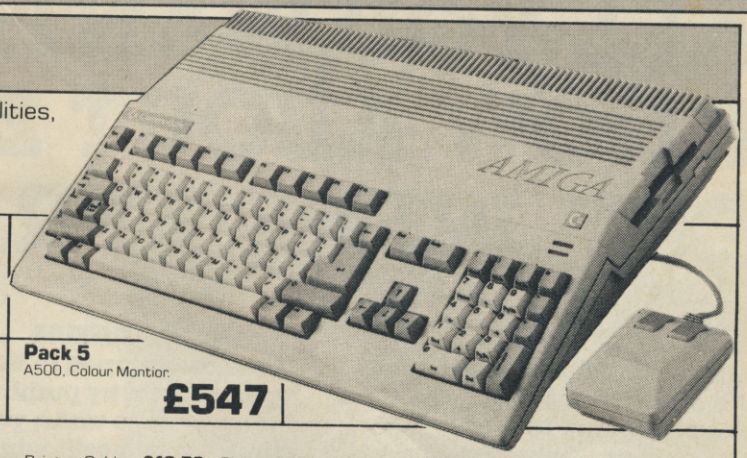

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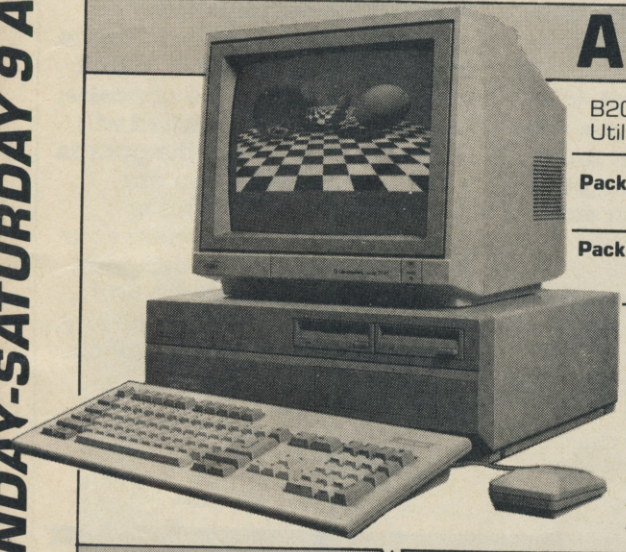

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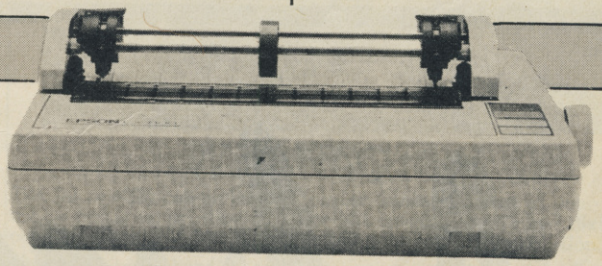

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ALL YOU WANTED TO KNOW ABOUT ZORK III BUT WERE AFRAID TO ASK

CENTRAL AREA
Give the old man the waybread; the moss can be used for a light source for only 10 moves; you can only get through te great iron door after the earthquake; The aqueduct is destroyed by the earthquake so get over it fast; to get light at the southern end of the lake, use the grue repellent to get to the key room. The viewing table is useful for Pre Positioning the light source.

THE LAND OF SHADOW
Get the hood from the hooded figure by fighting him; the chest can only be opened by the man at the cliff; the invisibly potion in the vial will only last for two moves.

THE ROYAL MUSEUM
If you are trapped in the small square room, try pushing one of the sandstone walls; you can climb out by positioning one of the ladders; the solution to the puzzle problem is, starting from the entrance, d,push east wall,s,s,se,push south wall,n,ne,push south wall, take book, push south wall,e,ne, push west wall,sw,nw,ne,push south wall,sw,push east wall,ne,push south wall,nw,n,n,n,push east wall,sw,s,se,ne,n,push west wall,nw,push south wall,again,w,nw,nw,push south wall,se,se,se,ne,push west wall,again,sw,push north wall,again,again,nw,up,yell,the gold machine is a time machine; if you get the ring, Flathead has the other jewels moved.

BEYOND THE SECRET DOOR
The mirror is a doorway; block the red beam with an object;

THE RECTANGULAR BOX
Pushing the red or yellow wallscan cause the box to rotate in a clockwise direction, black and white walls do the opposite; the Pine wall when pushed will let you leave the box; the guards will kill you if when you are inside the box the mirror is broken or the door is open; your goal is to become the dungeon master. You will need the hood, cloak, amulet, and ring, the key, wooden staff and the lore book.

Adventure

Thats it for this month folks, look out for next issue, for Infocom's Borderzone, Jack the Ripper, and some more of your do it yourself adventures, so until then keep those letters coming.

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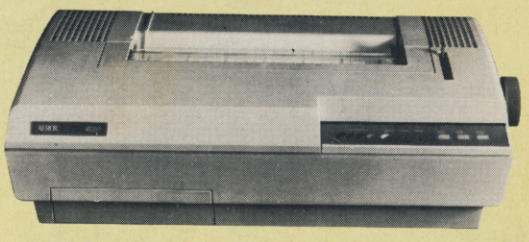

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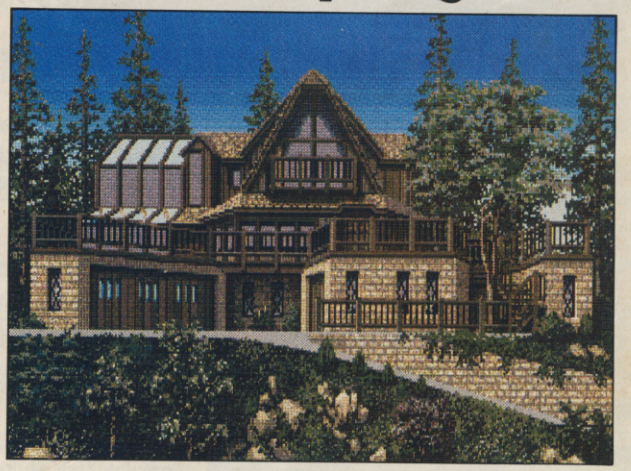

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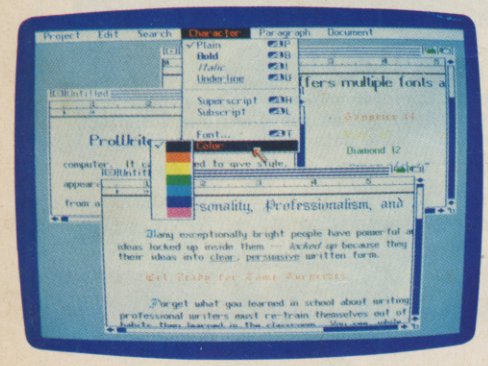

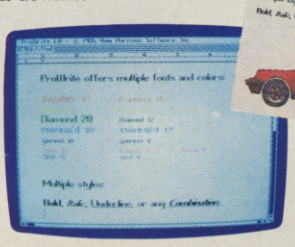

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by Mark Baker
C-64

Do you lose track of time when you are using your computer? Then let Mark help you out with his interrupt driven Alarm program.

This is an interrupt driven alarm routine which allows ordinary use of the computer while it is running. When activated it will ask for the time in hours & minutes. It won't allow an illegal/impossible time to be set. It works by counters triggered every sixieth of a second. 240 of these is 4 seconds, and 15 of those is a minute. Comparisons are made between this value and the time you set at loc. 49300 until they match. Pressing 'F1' will stop the alarm.

```
0 REM ****************************
1 REM *                          *
2 REM * "ALARM!" BY M.BAKER '87 *
3 REM *                          *
4 REM ****************************
10 L= 49152
20 FOR X=0 TO  6 :T=0:FOR Y=0 TO 14
30 READ A:IF A <0 OR A >255 THEN 60
40 POKE L,A:L=L+1:T=T+A:NEXT
50 READ A:T=T-(INT(T/256)*256)
60 IF T<>A THEN PRINT"DATA ERROR IN LINE"1000+(X*10)"CHECKSUM <>"A:STOP
70 PRINT 1000+(X*10)"OK":NEXT
80 Z=49310:POKE Z,0:POKE Z+1,0:POKE Z+2,0:POKE Z+3,0
90 PRINT CHR$(147);CHR$(17)
100 INPUT" HOURS (0-4) =";H:H=INT(H):IF H<0 OR H>4 THEN 90
110 N=H*60:INPUT" MINS (0-59) =";M:M=INT(M):IF M>59 OR M=0 AND H=0 THEN 90
120 IF H=4 AND M>14 THEN PRINT" SORRY - TOO LONG!":FOR P=0 TO 999:NEXT:GOTO 90
130 N=N+M:POKE 49300,N:PRINT"COUNTING..."
140 POKE 788,0:POKE 789,192
150 NEW
1000 DATA 174,158,192,232,224,240,240,006,142,158,192,076,049,234,162,  175
1010 DATA 000,142,158,192,174,159,192,232,224,015,240,006,142,159,192,  179
1020 DATA 076,049,234,162,000,142,159,192,174,160,192,232,142,160,192,  218
1030 DATA 236,148,192,016,003,076,049,234,162,058,142,020,003,174,161,  138
1040 DATA 192,142,032,208,232,142,161,192,174,197,000,224,004,240,003,  095
1050 DATA 076,049,234,162,049,160,234,142,020,003,140,021,003,076,049,  138
1060 DATA 234,000,000,000,000,000,000,000,000,000,000,000,000,000,000,  234
```

FIGURE IT

by Peter McDonald
C-128

This is a simple BASIC programme wth an intriguing touch of MAGIC!

This program does not reach the heights of sophistication. Indeed the construction is fairly rudimentary. But it works, and it should not be difficult to enter. It may cause amusement at a party.

Program

It is another version of 'Guess the number'. But it does not require the calculations to be done on the screen. On the contrary, it asks that they be done, with unknown numbers, on a piece of paper. Then the victim strikes out one figure from the result. He answers two questions (or sometimes only one) put to him by the computer. Though the answers seem to contain no clue to the indentity of the figure he has struck out, the computer tells him what it was.

That is the basic plot. It has its origins in an old 'parlour trick' which was ancient when the first computer appeared. But the use of the computer makes it all seem more puzzling, because it cannot see, or engage an accomplice to signal to it.

I am not going to reveal the method involved. It does not depend on 'artificial intelligence' (though you can con your friends into thinking it does). If you run the program through once or twice you will twig the secret anyway. Or you can work it out from the listing. Or perhaps you are one of the those rare and delightful people who prefer to take t all on faith and believe your computer really is a magician.

You will notice that I have introduced one or two trimmings. There is, of course, the usual option at the end, to repeat the program if you wish.

SLEEPS are introduced here and there, to allow time for the off-screen calculations to be done. Examples are given, to make it clear what is meant by a three-figure number, etc. There is an 'error-trap' to make sure that if the 'victim' gives a completely cockeyed total, he will be told that his addition is incorrect. But this only works if he arrives at a total of less than 9 or more than 18 (which is impossible). If he gets 12 when it should be 13, say, he will be given a wrong answer and you will have to unravel it for him.

Nothing the least brilliant about this. But you may find it interesting, mildly mysterious, and perhaps a conversation piece if the subject of intelligent computers ever arises.

I wondered whether to write it for the C64. But there is a wealth of material for that marvellous machine, and it seemed a pity not to use one or two of the programming helps provided by its big brother. However, I do not think it would take a C64 owner long to adapt it.

Hope it gives you some fun!

```
10 REM-LISTING FOR COMMODORE C128
20 DEF FNC(X)=20-(LEN(A$)/2)
30 PRINT CHR$(147)
40 REM-'FIGURE IT'-PETER MCDONALD
50 WINDOW 0,0,39,5
60 A$="****************************************":GOSUB590
70 A$="*             --FIGURE IT--              *":GOSUB590
80 A$="****************************************":GOSUB590 :GOTO 100
90 PRINT CHR$(147):END
100 WINDOW1,6,39,24
110 PRINT CHR$(147):A$="PLEASE WRITE DOWN ON A PIECE OF PAPER":GOSUB 580
120 A$="ANY NUMBER YOU LIKE CONTAINING": GOSUB 580
130 A$="THREE DIFFERENT DIGITS": GOSUB 580
140 SLEEP 5: PRINT:PRINT:PRINT:PRINT:PRINT
150 A$="WHEN YOU HAVE DONE THAT PRESS Y":GOSUB 610
160 PRINT CHR$(147):A$="NOW REVERSE THE FIGURES IN YOUR NUMBER":GOSUB 580
170 A$="FOR INSTANCE, IF IT WAS 123, WRITE 321.":GOSUB 580
180 SLEEP 5:PRINT:PRINT:PRINT:PRINT:PRINT
190 A$="IF O.K. SO FAR, PRESS Y": GOSUB610
200 PRINT CHR$(147):A$="GOOD. YOU NOW HAVE":GOSUB 580
210 A$="TWO 3-DIGIT NUMBERS WRITTEN DOWN":GOSUB 580
220 A$="PLEASE TAKE THE SMALLER FROM THE LARGER": GOSUB 580
230 PRINT:PRINT:PRINT:PRINT:SLEEP 6:A$="WHEN YOU HAVE DONE THAT PRESS Y":GOSUB 6
10
240 PRINT CHR$(147):A$="NOW CANCEL ONE FIGURE IN YOUR ANSWER":GOSUB 580
250 PRINT:A$="FOR EXAMPLE, IF YOUR ANSWER IS 456":GOSUB 580
260 PRINT:A$="YOU CAN STRIKE OUT":GOSUB580
270 PRINT:A$="THE 4, THE 5, OR THE 6.":GOSUB 580
280 SLEEP5:PRINT:PRINT:PRINT:PRINT:PRINT
290 A$="WHEN READY PRESS Y":GOSUB 610
300 PRINT CHR$(147):A$="THE PROBLEM NOW IS TO GUESS":GOSUB 580
310 PRINT:A$="WHICH FIGURE YOU STRUCK OUT":GOSUB 580:SLEEP3
320 PRINT CHR$(147):PRINT:A$="PLEASE HELP BY GIVING":GOSUB 580
330 PRINT:A$="THE POSITION OF THE FIGURE":GOSUB 580
340 SLEEP3:PRINT CHR$(147):PRINT: A$="DID YOU STRIKE OUT THE FIRST":GOSUB 580
350 PRINT:A$="FIGURE IN YOUR ANSWER (Y/N)?":GOSUB 580
```

```
360 GETKEY B$:IF B$="Y" GOTO 400:ELSE GOTO 370
370 PRINT:PRINT:A$="WAS IT THE MIDDLE FIGURE (Y/N)?":GOSUB 580
380 GETKEY B$:IF B$="Y" THEN 471: ELSE GOTO 390
390 PRINT:PRINT CHR$(147):PRINT:A$="SO IT MUST BE THE LAST FIGURE.":GOSUB 580
400 PRINT:PRINT CHR$(147):A$="PLEASE ADD THE OTHER":GOSUB 580
410 PRINT:A$="TWO FIGURES TOGETHER":GOSUB 580:PRINT
420 PRINT:PRINT:INPUT"            WHAT IS THE TOTAL ";T:SLEEP1
430 IF T=>9 AND T=<18 THEN GOTO 460:PRINT:PRINT
440 A$="NOT POSSIBLE--PLEASE TRY AGAIN.":GOSUB 580:PRINT CHR$(147)
450 PRINT:PRINT:A$="WHEN YOU HAVE ADDED THEM AGAIN PRESS Y":GOSUB 610:GOTO 420
460 PRINT CHR$(147):A$="THANK YOU VERY MUCH....":GOSUB580:PRINT:PRINT
470 Q=18-T:PRINT  CHR$(147):GOTO 480
471 Q=9
480 PRINT:A$="THE FIGURE YOU STRUCK OUT WAS:":GOSUB580:PRINT: PRINT TAB(17)"* *
*"
490 PRINTTAB(17)"*    *"
500 PRINT TAB(17)"*" Q "*"
510 PRINTTAB(17)"*    *"
520 PRINTTAB(17)"* * *"
530 SLEEP3:PRINT:PRINT:PRINT:A$="WOULD YOU LIKE TO TRY AGAIN (Y/N)?":GOSUB 580
540 GETKEY B$:IF B$="Y" THEN PRINT:PRINT:GOTO 110
550 PRINT:PRINT CHR$(147):A$="THANK YOU FOR YOUR CO-OPERATION.":GOSUB 580:SLEEP2
560 WINDOW 1,6,39,12,1
570 WINDOWO,0,39,5,1: END
580 PRINT
590 PRINT TAB(FNC(X));A$:SLEEP 1: RETURN
600 GETKEY B$:IF B$="Y" THEN RETURN:ELSE 600
610 PRINT TAB(FNC(X));A$:SLEEP 1
620 GETKEY B$:IF B$="Y" THEN RETURN:ELSE 620
```

MENU PLUS

by Milan Kalal
C-16/+4
Inspired by Paul Gerard's MENUGEN for the 64, Milan has written a similar utility to provide Amiga-style drop down menus on the Plus/4.

Type in and save the following programmes; Menu/Plus Loader and Menu/Plus demo.

Before loading in Menu/Plus loader you must first raise the bottom of BASIC by:

POKE 43,1: POKE 44,22: POKE 45,3: POKE 46,22: POKE 5632,0: CLR

After loading the programme, RUN it. This will generate MENU/PLUS in its organisal location $1001-$1390 (i.e. the location before the activation). This must now be saved to tape or disk using the MONITOR command: S"MENU/PLUS",1, 1001, 1390 (disk useers should use 8 instead of 1).

Once saved, reset the computer, reload MENU/PLUS and then RUN it. The demo programme can now be loaded and RUN.

What follows is a detailed description of MENU/PLUS.

MENU/PLUS allows you to display any menu with title and up to 24 items (you can have more items but they will be ignored by MENU/PLUS) at four different positions on the screen. Each menu is ten characters wide. Any item can have any number of characters from which only up to first eight characters will be displayed leaving one blank space on each side of the window.

MENU/PLUS does not disturb the screen as it immediately saves the relevant part into RAM buffer ($1000-$11FF). After your choice, the screen is restored to its previous state.

The menu appears in reverse with black characters on colour background. A luminosity of the title is set higher than that of individual items. An item under

consideration blinks. You can change the item using cursor up and down keys. To select the item, press RETURN. This restores the previous screen and the number of selected items is assigned to an integer variable before returning to your programme. This integer variable then can be used to determine a subsequent action in an ON....GOTO.... or in an IF.... THEN.... statement.

The proper syntax for calling MENU/PLUS from within a BASIC programme is as follows:

SYS 4608, W%, W$(0), integer.

Before this call it is necessary to assign the value to the integer variable W% and to dimension a string-array W$0.

Recommended syntax is:

W% = number of items: DIM W$ (W%)

Then assign a title string to W$(0) and item strings to W$(1), W$(2),..., W$(W%).

Integer determines the position of menu on the screen from the left to the right and must be therefore 1,2,3 or 4.

Thus, to pull down menu of 5 items on the right hand side of the screen the following sequence of commands should be used:

W% = 5:DIM W$(W%)

SYS 4608, W%, W$(0), 4

On the output from MENU/PLUS the integer variable W% will contain the number of selected item.

You can, of course, use any other variable names instead of W% and W$0

Two short subroutines were included in MENU/PLUS which allow the interactive use of function keys. In such a case before the first call of MENU/PLUS from within your BASIC programme perform SYS 4705 command to release function keys for interactive programming.

Before the exit from such a programme call SYS 4722 to restore the original strings assigned to function keys.

MENU/PLUS requires for its functioning memory $1000-$1600. So the beginning of BASIC must be shifted to $1601. This is done, however, for you by MENU/PLUS itself during the activation as well as the choice of the initial set of colours for border, background, characters and individual windows. Should you wish you can change these colours to suit your needs. Colours of border, background and characters can be varied the usual way using COLOUR command, colours of individual windows are stored in the form title 1, items 1, title 2, items 2, title 3, items 3, title 4, items 4 in eight consequtive bytes starting from 5408 (after the activation). Thus, e.g. by poking into these bytes from within your BASIC programmes you can assign any colour to any window at any time.

```
0 REM ********************************
1 REM *                              *
2 REM *       MENU/PLUS LOADER       *
3 REM *                              *
4 REM *  BY MILAN KALAL JULY 1987    *
5 REM *                              *
6 REM ********************************
10 L= 4096
20 FOR X=0 TO  60 :T=0:FOR Y=0 TO 14
30 READ A:IF A <0 OR A >255 THEN 60
40 POKE L,A:L=L+1:T=T+A:NEXT
50 READ A:T=T-(INT(T/256)*256)
60 IF T<>A THEN PRINT"DATA ERROR IN LINE"1000+(X*10)"CHECKSUM <>"A:STOP
70 PRINT 1000+(X*10)"OK":NEXT
1000 DATA 000,012,016,001,000,158,032,052,049,049,050,000,000,000,000,  163
1010 DATA 000,169,001,133,043,169,022,133,044,133,046,133,048,133,050,  233
1020 DATA 169,003,133,045,133,047,133,049,169,000,141,021,255,169,000,  187
1030 DATA 141,025,255,169,113,141,059,005,169,147,032,210,255,169,000,  098
1040 DATA 133,216,169,021,133,217,169,101,133,218,169,019,133,219,162,  164
1050 DATA 004,160,000,177,218,145,216,200,208,249,198,217,198,219,202,  051
1060 DATA 208,242,169,000,141,000,022,076,013,128,000,056,032,057,216,  080
1070 DATA 138,072,152,072,032,145,148,032,173,148,165,071,141,048,021,  022
1080 DATA 165,072,141,049,021,032,145,148,032,173,148,165,095,133,111,  094
1090 DATA 165,096,133,112,024,165,095,105,005,133,095,165,096,105,000,  214
1100 DATA 133,096,160,001,032,209,004,032,018,021,032,145,148,024,032,  063
1110 DATA 062,142,198,020,165,020,141,055,021,032,126,018,032,150,018,  176
1120 DATA 032,163,019,032,021,020,032,212,018,104,168,104,170,024,032,  127
1130 DATA 057,216,096,160,008,185,094,005,153,039,021,169,000,153,094,  170
1140 DATA 005,136,208,242,096,160,008,185,039,021,153,094,005,136,208,  160
1150 DATA 247,096,173,055,021,010,168,185,032,021,141,057,021,200,185,  076
```

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Program

```
1160 DATA 032,021,141,058,021,009,128,141,059,021,096,032,018,019,032,  060
1170 DATA 044,019,032,070,019,032,079,019,169,001,141,051,021,160,000,  089
1180 DATA 177,219,145,105,177,221,145,107,192,009,240,004,200,076,169,  138
1190 DATA 018,173,051,021,205,050,021,240,018,238,051,021,032,107,019,  241
1200 DATA 032,121,019,032,135,019,032,149,019,076,167,018,096,032,018,  197
1210 DATA 019,032,044,019,032,070,019,032,079,019,169,001,141,051,021,  236
1220 DATA 160,000,177,105,145,219,177,107,145,221,192,009,240,004,200,  053
1230 DATA 076,231,018,173,051,021,205,050,021,240,018,238,051,021,032,  166
1240 DATA 107,019,032,121,019,032,135,019,032,149,019,076,229,018,096,  079
1250 DATA 169,000,133,219,169,012,133,220,032,088,019,024,165,219,109,  175
1260 DATA 056,021,133,219,165,220,105,000,133,220,096,169,000,133,221,  099
1270 DATA 169,008,133,222,032,088,019,024,165,221,109,056,021,133,221,  085
1280 DATA 165,222,105,000,133,222,096,169,000,133,105,169,016,133,106,  238
1290 DATA 096,169,000,133,107,169,017,133,108,096,173,055,021,010,072,  079
1300 DATA 010,010,141,056,021,104,024,109,056,021,141,056,021,096,024,  122
1310 DATA 165,219,105,040,133,219,165,220,105,000,133,220,096,024,165,  217
1320 DATA 221,105,040,133,221,165,222,105,000,133,222,096,024,165,105,  165
1330 DATA 105,010,133,105,165,106,105,000,133,106,096,024,165,107,105,  185
1340 DATA 010,133,107,165,108,105,000,133,108,096,169,001,141,051,021,  068
1350 DATA 032,186,019,173,051,021,205,050,021,240,006,238,051,021,076,  110
1360 DATA 168,019,096,173,051,021,010,024,109,051,021,105,004,141,054,  023
1370 DATA 021,032,122,020,032,018,019,032,175,020,172,054,021,032,198,  200
1380 DATA 004,141,053,021,200,032,198,004,133,034,200,032,198,004,133,  107
1390 DATA 035,169,032,162,000,157,240,015,232,224,010,208,248,160,000,  100
1400 DATA 032,176,004,200,153,240,015,204,053,021,240,004,192,008,208,  214
1410 DATA 240,032,190,020,160,000,177,095,145,219,200,192,010,240,003,  131
1420 DATA 076,008,020,096,169,002,141,051,021,032,112,020,032,228,255,  239
1430 DATA 201,017,240,011,201,145,240,027,201,013,240,042,076,029,020,  167
1440 DATA 173,051,021,205,050,021,240,230,032,122,020,238,051,021,032,  227
1450 DATA 112,020,076,029,020,173,051,021,201,002,240,211,032,122,020,  050
1460 DATA 206,051,021,032,112,020,076,029,020,173,048,021,133,095,173,  186
1470 DATA 049,021,133,096,160,001,056,173,051,021,233,001,145,095,169,  124
1480 DATA 000,136,145,095,096,173,059,021,141,052,021,032,141,020,096,  204
1490 DATA 173,051,021,201,001,208,006,173,057,021,076,115,020,173,058,  074
1500 DATA 021,076,115,020,032,044,019,032,160,020,173,052,021,160,000,  177
1510 DATA 145,221,200,192,010,208,249,096,174,051,021,224,001,240,007,  247
1520 DATA 032,121,019,202,076,163,020,096,174,051,021,224,001,240,007,  167
1530 DATA 032,107,019,202,076,178,020,096,169,240,133,095,169,015,133,  148
1540 DATA 096,160,000,177,095,032,216,020,145,095,200,192,010,240,003,  145
1550 DATA 076,200,020,096,072,056,233,032,048,028,104,072,056,233,064,  110
1560 DATA 048,017,104,072,056,233,096,048,020,104,072,056,233,128,048,  055
1570 DATA 020,076,250,020,104,076,014,021,104,169,032,076,014,021,104,  077
1580 DATA 056,233,064,076,014,021,104,056,233,032,076,014,021,024,105,  105
1590 DATA 128,096,141,050,021,056,233,025,048,005,169,025,141,050,021,  185
1600 DATA 096,106,074,100,068,110,078,105,073,000,000,000,000,000,000,  042

10 REM ***********************************
20 REM *                                 *
30 REM *         MENU/PLUS  DEMO         *
40 REM *                                 *
50 REM ***********************************
60 S%=4:P%=8:D%=4:V%=9
70 DIM S$(S%),P$(P%),D$(D%),V$(V%),P%(P%),P(2),D(2)
80 B$=CHR$(147):R$=CHR$(13)
90 PRINT B$:PRINT R$;R$;R$;"              SOUND     = F1"
100 PRINT"              PITCH     = F2"
110 PRINT"              DURATION  = F3"
120 PRINT"              VOLUME    = HELP"
130 PRINT R$;R$;"    PRESS FUNCTION KEY AND THEN USE    "
140 PRINT R$;"   CURSOR UP AND DOWN KEYS AND RETURN"
150 PRINT R$;"            TO MAKE A CHOICE";R$;R$
160 FOR X=0 TO S%:READ S$(X):NEXT
170 FOR X=0 TO P%:READ P$(X):NEXT
180 FOR X=0 TO D%:READ D$(X):NEXT
190 FOR X=0 TO V%:READ V$(X):NEXT
200 FOR X=1 TO P%:READ P%(X):NEXT
210 D(1)=30:D(2)=30:P(1)=P%(1):P(2)=P(1)
220 SYS 4705
```

CONTINUED ON PAGE 157

operation. And it should certainly know abut that. It is unquestionably true that there are still far fewere 16 bit than 8 bit machines in use. That means that the competition for the 16 bit buyer is somewhat less fierce than in the overcrowded 8 bit market. And any reasonably good games can sell well enough to the still underendowed Amiga to bring a profit that is acceptable by a company like Robtek but possibly not large enough to be specially attractive to one of the international giants.

Robtek have already had one of the successes of the Amiga entertainment software list. That was Hollywood Poker for which Robtek managed to persuade a Miss Germany, among other beautiful girls, to strip off and let them digitise the photographs. These photographs now reward the skill at poker of Amiga players. It looks like there may be a second version of this popular game and it is known that many eager Amiga users are hoping for an invitation to be present at the next photographic session. Perhaps Robtek could run a competition for that too.

Zysblat is well aware that the High Tec label may take longer to establish but he is looking to release three or four business style utility products a month. He believes that it is vital these days for a software house not to rely entirely on games, for the Amiga owner is not that same kind of computer user as the millions who bought the 64.

"It is determined to move aggressively into the 16 bit world and play a leading role in its development"

Although Robtek will not reveal many titles yet, it is clear that they have a growing list slated for early 1988. They have also a definite interest in hardware and peripherals. They already distribute one of the most successful memory products — a 2 Meg expansion that seems to have become the accepted requirement for all serious Amiga power-users.

It is not necessary for Robtek to create all the products it releases. As its reputation has built up, a number of U.S. companies manufacturing Amiga products have chosen Robtek to release them outside the U.S.A. and this trend of introducing already tested and well-received products is one that sees as likely to increase. Falling into this category are products like Promise reviewed in this CCI — and it also includes a 64 emulator, which allows the Amiga to run programs written for the 64, which Robtek is actively considering. This will also lead to an exchange of products with Robtek's being released in the profitable U.S. market.

As another software house that is also concentrating on the Amiga told CCI, "This is the opportunity of a lifetime!" Robtek sees the Amiga situation in the same way. It is an opportunity that it is setting out to go for. It is determined to move aggressively into the 16 bit world and play a leading role in its development. It has already lined up a whole series of products that will be released during 1988. Robtek has decided to put substantial resources into raising its public profile and promoting its Diamond and High Tec brands. It has ambitions and energetic management. If the products it offers to the Amiga user can equal its determination to succeed, then there could be, as the 16 bit user base grows, a credible possibility that Robtek could emerge from the pack to challenge the really big players in the market. But that kid of success might bring a problem. On which side of the Channel will Robert Zysblat then see the biggest rewards and will Sabena Airlines lose one of its best customers?

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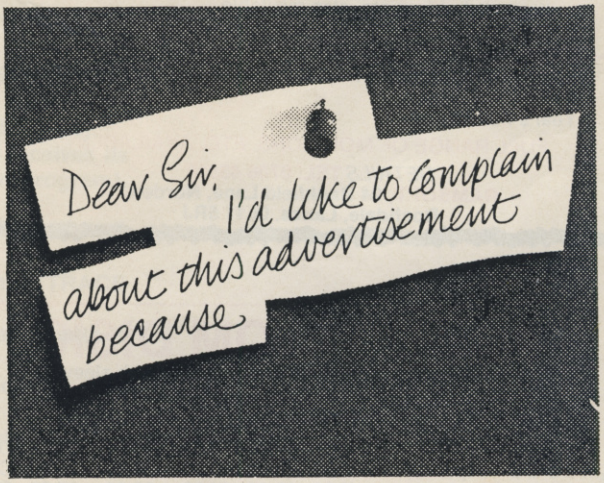

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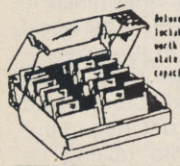

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```
230 P=PEEK(198):IF P=64 THEN 230
240 IF P<3 OR P>6 THEN 230
250 ON P-2 GOSUB 330,270,310,320
260 PRINT Z$:GOTO 230
270 SYS 4608,S%,S$(0),1:IF S$(S%)="EXIT" THEN 390
280 Z$=S$(0)+":     "+S$(S%):ON S% GOSUB 290,290,300:RETURN
290 VOL V%-1:SOUND S%,P(S%),D(S%):RETURN
300 VOL V%-1:SOUND 1,P(1),D(1):SOUND 2,P(2),D(2):S%=1:RETURN
310 SYS 4608,P%,P$(0),2:Z$=P$(0)+":     "+P$(P%):P(S%)=P%(P%):RETURN
320 SYS 4608,D%,D$(0),3:Z$=D$(0)+":  "+D$(D%):D(S%)=D%*30:RETURN
330 SYS 4608,V%,V$(0),4:Z$=V$(0)+":    "+V$(V%):RETURN
340 DATA SOUND,VOICE1,VOICE2,VOICE1+2,EXIT
350 DATA PITCH,C,D,E,F,G,A,B,C1
360 DATA DURATION,SEMI-QR,QUAVER,SEMI-CT,CROCHET
370 DATA VOLUME,0,1,2,3,4,5,6,7,8
380 DATA 596,643,685,704,739,770,798,810
390 SYS 4722:END
```

TRACE/PAUSE AND KEY BLEEP

by R. Freeman
C16/+4

These are two small machine code routines, a very useful debugging utility for BASIC programmers and a key bleep routine.

1 "C16 KEY BLEEP PROGRAM" is a short routine that sits at location 1630 (RAM area for speech). It is run from the interrupts and receives its comparison values from the keyboard matrix (location 198, HEX $ C6).

2 "C16 TRACE/PAUSE" is also run from the IRQ system and receives its comparison values from the keyboard matrix (location for above program). This program too sits at location 1630.

When the escape key is pressed location 747 is loaded with 128 (TRACE ON).

When the inst/zel key is pressed location 747 is loaded with Q (TRACE OFF).

When the down curser key is pressed location 240 is loaded with 1 (PAUSE ON).

The trace/pause will only work in run mode. It is checked by looking into location 129. If this reveals 128 then the machine is in run mode.

The pause can be used generally and not only in trace/pause mode.

I hope you find my short routines suitable for publication.

```
10 FORA=1630TO1692:READB
20 POKEA,B
30 NEXTA
40 SYS1679
100 DATA 165,129,201,128,240,003,076,014
110 DATA 206,165,198,201,052,240,011,201
120 DATA 000,240,015,201,040,240,019,076
130 DATA 014,206,169,128,141,235,002,076
140 DATA 014,206,169,000,141,235,002,076
150 DATA 014,206,169,001,133,240,076,014
160 DATA 206,169,006,141,021,003,169,094
170 DATA 141,020,003,096,000,000,000
```

```
10 FORA=1630TO1695:READB
20 POKEA,B:NEXTA
30 SYS1684
40 CLR:NEW
100 DATA 165,198,205,159,006,240,039,141
110 DATA 159,006,201,064,240,032,169,202
120 DATA 141,015,255,169,127,141,016,255
130 DATA 169,040,141,017,255,160,000,200
140 DATA 192,064,240,010,162,000,232,224
150 DATA 128,240,244,076,132,006,169,008
160 DATA 141,017,255,076,014,206,169,094
170 DATA 141,020,003,169,006,141,021,003
180 DATA 096,000
```

Program

DISK ERRORS

by Tony Ackland
C-64

Tony Ackland has written a machine code utility that will enable your programs to handle disk errors with a minimum of coding and fuss.

Disk errors is a utility routine written in machine code for the CBM 64 & 1541 Drive. It is designed to be used from within any Basic program that uses Disk File Handling & gives a fast & reliable report on any disk errors via the error channel.

To use this routine, call with a SYS 49152. If there are no errors reported from the DOS then the routine returns control to your basic program. If an error is detected, then the program is halted & in order to protect any data all files are closed at the C64 & 1541 ends of the system. An error report is then displayed showing the ERROR No., MESSAGE, TRACK & BLOCK. Pressing the space bar will return control to your program. The message are the same as explained on page 42-46 of the 1541 users manual.

Whilst this could be achieved with a simple basic routine, this special routine will let you check the error channel after each piece of data is transferred without program execution being slowed down too much & ensuring total security of data.

The error display will use the colours currently in use by your own Program & uses File #15 & Channel #15.

The program "DISK ERRORS" is a basic program that pokes the Disk error routine into RAM 49152-49422. However, the code is re-locatable so you can insert it in any valid area of RAM by changing the Variable "L" in line 10.

```
1 REM **************************
2 REM *   DISK ERROR ROUTINE   *
3 REM *    BY TONY ACKLAND     *
4 REM *                        *
5 REM *        OCT 1987        *
6 REM *        FOR  THE        *
7 REM *    C64    &    1541    *
8 REM **************************
10 L=49152
20 FOR X=0 TO 17:T=0:FOR Y=0 TO 14
30 READ A:IF A<0 OR A>255 THEN 60
40 POKE L,A:L=L+1:T=T+A:NEXT
50 READ A:T=T-(INT(T/256)*256)
60 IF T<> A THEN PRINT"DATA ERROR IN LINE"1000+(X*10)"CHECKSUM <>"A:STOP
70 PRINT 1000+(X*10)"O.K.":NEXT
80 PRINT:PRINT"TO CALL ROUTINE USE:"
90 PRINT:PRINT"SYS 49152"
100 PRINT:PRINT"THE CODE IS RE-LOCATABLE"
110 END
1000 DATA 169,010,197,251,240,019,133,251,169,015,162,008,160,015,032,  039
1010 DATA 186,255,169,000,032,189,255,032,192,255,162,015,032,198,255,  179
1020 DATA 032,207,255,072,201,048,208,001,096,201,049,208,001,096,024,  163
1030 DATA 169,147,032,210,255,162,005,160,011,032,240,255,169,042,032,  129
1040 DATA 210,255,032,210,255,032,210,255,169,032,032,210,255,169,068,  090
1050 DATA 032,210,255,169,073,032,210,255,169,083,032,210,255,169,075,  181
1060 DATA 032,210,255,169,032,032,210,255,169,069,032,210,255,169,082,  133
1070 DATA 032,210,255,169,082,032,210,255,169,079,032,210,255,169,082,  193
1080 DATA 032,210,255,169,042,032,210,255,032,210,255,032,210,255,024,  175
1090 DATA 162,020,160,012,032,240,255,169,080,032,210,255,169,082,032,  118
```

```
1100 DATA 210,255,169,069,032,210,255,169,083,032,210,255,169,083,032,  185
1110 DATA 210,255,169,032,032,210,255,169,083,032,210,255,169,080,032,  145
1120 DATA 210,255,169,065,032,210,255,169,067,032,210,255,169,069,032,  151
1130 DATA 210,255,169,032,032,210,255,169,066,032,210,255,169,065,032,  113
1140 DATA 210,255,169,082,032,210,255,024,162,010,160,008,032,240,255,  056
1150 DATA 104,032,210,255,162,040,032,207,255,032,210,255,202,208,247,  147
1160 DATA 032,195,255,032,231,255,032,228,255,240,251,201,032,208,247,  134
1170 DATA 169,000,133,251,169,147,032,210,255,169,019,032,210,255,096,  099
```

FLASHING DATASSETTES

by David Cocker
C-64 and C-128
No more wondering if your program is actually reading in data from tape. David Cocker shows you how.

If you have ever tried to use the datasette for a serious task involving a lot of data access then you will realise how awkward it can be, especially with your own programs. I have found that speed is not the greatest problem (as long as you are a patient sort of person, or alternatively a tortoise). The biggest set-back I have encountered is the way in which the screen blanks when the computer is loading, saving, or searching for data. This often causes a lot of problems as the computer does not tell you if the cassette is currently positioned in between programs or in the middle of one. Therefore I decided to write a program which would flash the screen (similar to some commercial turbo loads) when data is present on the tape. The program I came up with was in machine code and proved to be so useful over the next couple of months that I decided to let other CCI readers in on the act.

There are two versions of the program, one for the C-64 and the other for the C-128. NOTE: the C-128 can run both versions. The 64 version will work if the 128 is in 64 mode. Both versions are in BASIC loader form, so take care when typing in the data.

Once the routine is operating, when you ask the computer to load something the screen will flash when data is present and will not flash when data isn't present. However, sometimes the screen will continue to flash when no data is present, but the lines formed on screen will be tightly packed so you can still tell when no data is there.

The routine will stop when RUN/STOP and RESTORE are pressed, but can be restarted by using the SYS command located near the end of the relevant BASIC loader.

Finally, I would recommend that you switch off the routine before running your programs, as the screen tends to change colour now and again whilst programs are running.

I hope you find the routine as useful as I have.

```
10 REM ***** CBM-128 VERSION *****
20 COLOR 0,1:COLOR 4,3:COLOR 5,8:SCNCLR:RESTORE
30 PRINT"***** FLASHING SCREEN FOR DATASETTE ****"
40 PRINT:PRINT"***** WRITTEN IN AUG'87 BY D.COCKER ****"
50 PRINT:PRINT:T=0:G=0
60 FOR X=3072 TO 3072+24:G=G+1:READ A
70 IF A<0 OR A>255 OR A<>INT(A) THEN PRINT"ERROR IN DATA POSITION";G:END
80 T=T+A:POKE X,A:NEXT X
90 IF T<>2746 THEN PRINT"ERROR IN DATA .... PLEASE CHECK.":END
100 PRINT"OK."
110 SYS 3072
120 END
130 DATA 120,169,13,141,40,3,169,12,141,41
140 DATA 3,88,96,165,191,201,0,240,3,238
150 DATA 32,208,76,110,246
```

Program

CONTINUED FROM PAGE 159

```
10 REM ***** CBM-64 VERSION *****
20 REM ** {CLR} MEANS PRESS 'SHIFT AND CLR/HOME' **
30 REM ** {YELO} MEANS PRESS 'CONTROL AND 8' **
40 PRINT"{CLR}":POKE53281,0:POKE53280,2:RESTORE
50 PRINT{YELO}***** FLASHING SCREEN FOR DATASETTE ****"
60 PRINT:PRINT"***** WRITTEN IN AUG'87 BY D.COCKER ****"
70 PRINT:PRINT:T=0:G=0
80 FOR X=49152 TO 49152+24:G=G+1:READ A
90 IF A<0 OR A>255 OR A<>INT(A) THEN PRINT"ERROR IN DATA POSITION";G:END
100 T=T+A:POKE X,A:NEXT X
110 IF T<>3058 THEN PRINT"ERROR IN DATA .... PLEASE CHECK.":END
120 PRINT"OK."
130 SYS 49152
140 END
150 DATA 120,169,13,141,40,3,169,192,141,41
160 DATA 3,88,96,165,190,201,0,240,3,238
170 DATA 32,208,76,234,255
```

★ Program Submission Procedure ★

DO NOT submit any programme or routine that you do not either own or have proper authority to do so.

ALWAYS include your name, address and the date on all material and any enclosures.
Do not forget to to make it clear exactly which computer/s your programme or article is applicable to.

Include ROM or DOS versions wherever they are pertinent.

Number all pages.

If you have to submit work which is hand-written then you must make sure it is printed clearly.

Never use staples. Use paperclips if necessary.
If you are saving your programme to tape then save it AT LEAST twice on each side.
When you save a programme on disk save it twice and call the second file "BACKUP".

Remember to label all tapes and disks with your name and the title of the programme. Label tape or disk with your name and the name or title of the programme.

Always ensure that disks are well packaged. They should ideally be sent in a commercial disk mailer or at least packed between two pieces of hardboard or rigid plastic.

Please allow at least 8 weeks for acknowledgement as all programmes have to be thoroughly tested and made into a suitable format.

Enclose a self-addressed stamped envelope or package if you would like your programme to be returned.

★ Programming tips ★
If you can, use CHR$(x) type commands instead of those hard to read graphic symbols.
If necessary renumber your programme on completion as many readers use auto number utilities to ease typing in.

Try to keep instructions within the programme itself as a sensible level. You can expand on them within the accompanying text if necessary.

TEST your programmes before submitting them or even better get a friend to test them for you.

If a programme contains machine code data please use decimal and not hex as there are fewer digits to be confused. Try and keep the same number of data statements in each line. Please add some form of error checking if your programme contains any more than five lines of data.

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Amiga user wants to swap top software. All letters will be answered. Send to: Erik Nilsen, Fullrvn 33,N-4056, Tananger, Norway. Tel: (0) 4-697508.

HELP! C-64 and C-128 user wants to swap software all over the world Disk only please. For fast answer send your list to: Stig Ingraeus, Hopeatie 9 E 40, 00440, Helsinki, Finland.

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Swap C64's games on cassette all over the world contact Jacques Pommies, 32 Rue Vital-Carles 33000 Bordequx, France.

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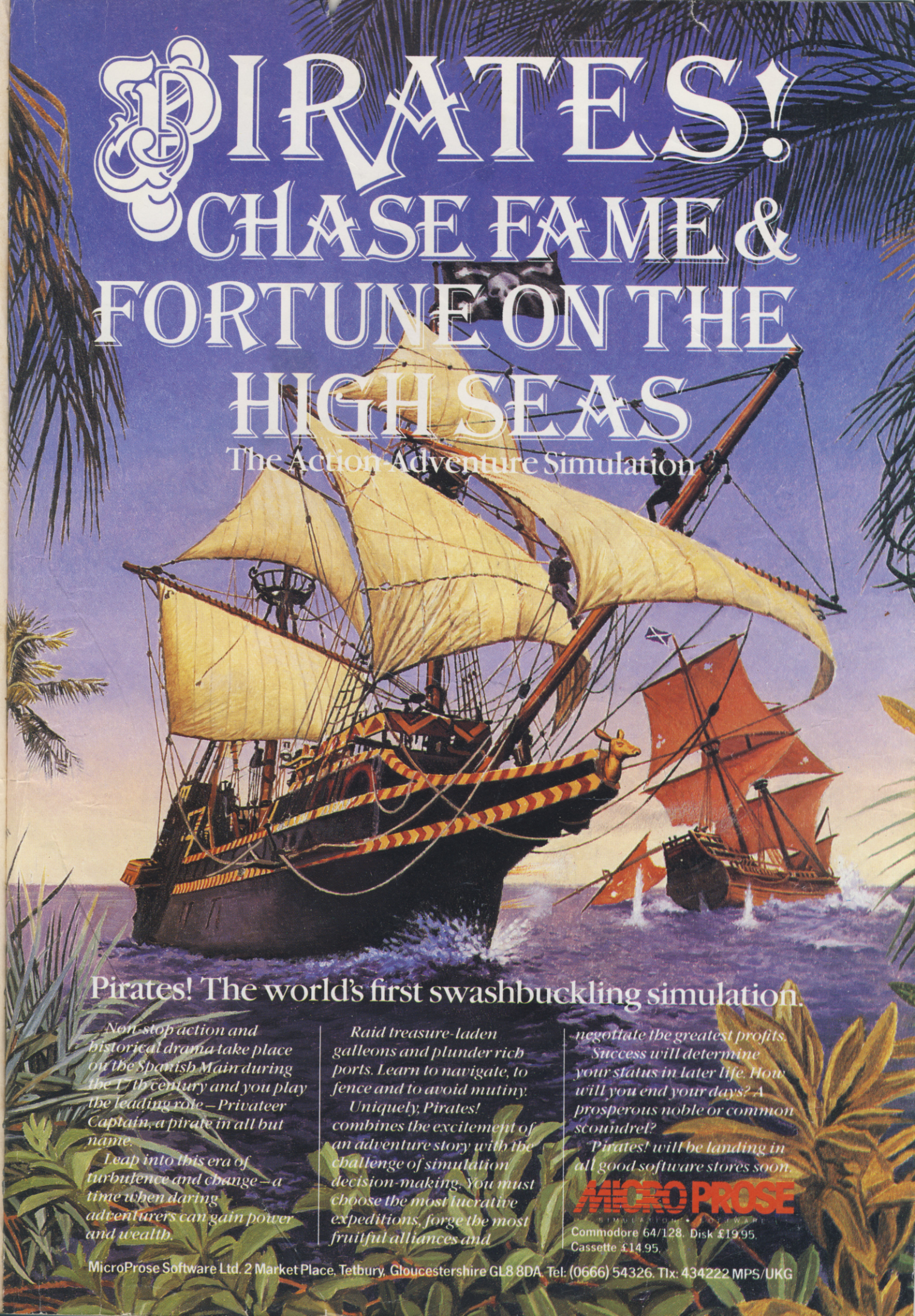

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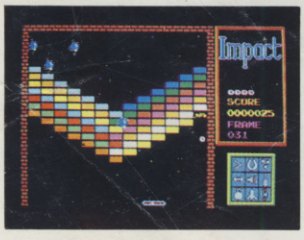

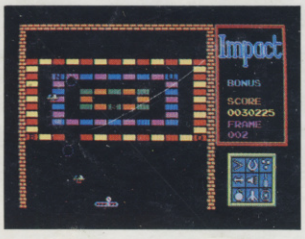

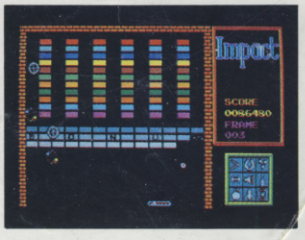

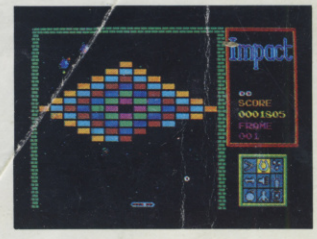

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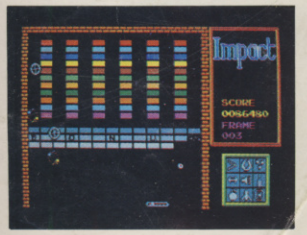

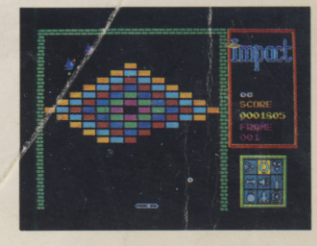

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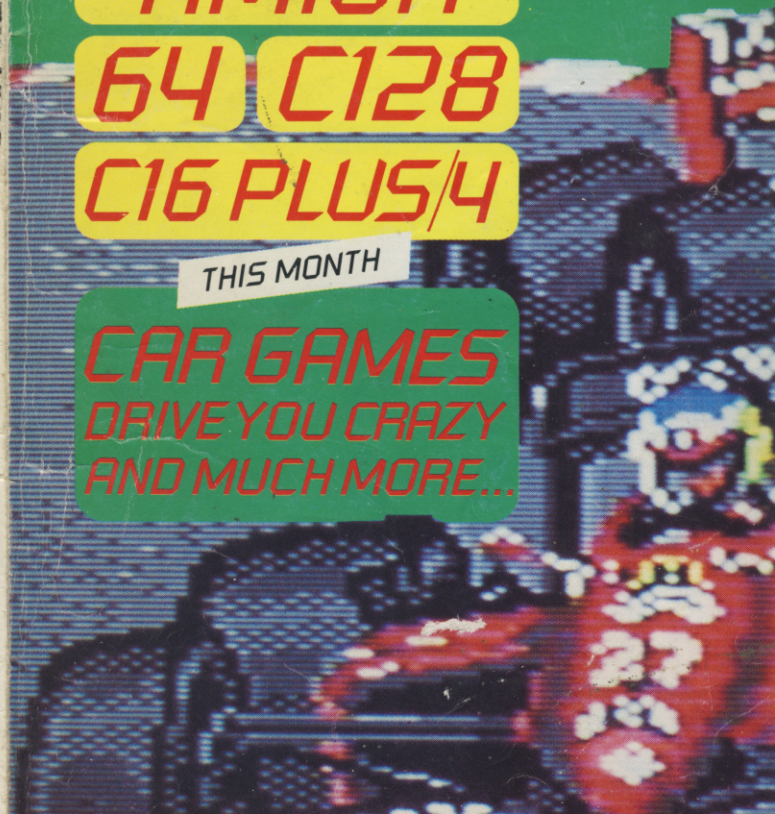

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